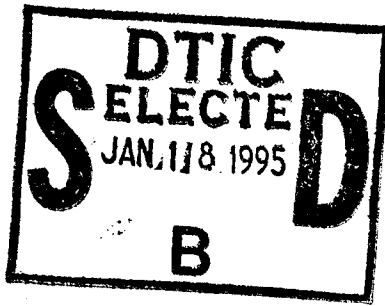


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THE FLORIDA STATE UNIVERSITY
SCHOOL OF CRIMINOLOGY AND CRIMINAL JUSTICE

RESIDENTIAL APARTMENT BURGLARIES IN
TALLAHASSEE POLICE DEPARTMENT ZONE 7, FLORIDA

By

CHRISTINE HELEN ASHENFELTER

A Thesis submitted to the
School of Criminology and Criminal Justice
in partial fulfillment of the
requirements for the degree of
Master of Science

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The members of the Committee approve the thesis
of Christine H. Ashenfelter defended on 9 May 1994

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APARTMENT BURGLARIES IN TALLAHASSEE
POLICE DEPARTMENT ZONE 7, FLORIDA

Christine Helen Ashenfelter
The Florida State University, 1994

Major Professor: C. Ray Jeffery, Ph. D.

Literature on burglaries provided little information on the environmental factors involved in apartment burglaries. The bulk of research has concentrated on house or commercial burglaries. Opportunity theory, social control theory, routine activities theory, rational choice theory, and limited rationality are the current environmental theories used to explain the causes of burglary (Hirschi, 1986; Cornish and Clarke, 1986; Mayhew, 1979; Cromwell et al, 1991).

Exploratory research was conducted on apartment burglaries in Tallahassee, Florida's police designated "zone 7." Zone 7 inhabits some of the poorest residents of Tallahassee and a large portion of the students who attend Florida State University. Research was gathered on all the apartment complexes which resided

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within zone 7 and had at least twenty five apartments, creating a sample of 39 apartment complexes.

Two hypotheses were tested in this research. They were: (1) the opportunity for burglary was related to ease of access, and (2) the opportunity for burglary was related to the existence of concealment or cover. The findings provided support for the two hypotheses by showing a relationship between characteristics which provided ease of access and characteristic which provided cover and concealment with burglary rates in apartment complexes. An examination of the deviant cases showed trends which were not apparent in the full sample and provided further support for the hypotheses. The research lent support for opportunity theory and for routine activities theory.

It is recommended that future tests of the hypotheses be conducted with a larger or more heterogeneous sample or at the micro-level. Specifically, analysis of the individual crime sites (the apartments in which burglaries occurred) could be a promising next step.

CHAPTER 1

THEORY

Introduction

In the spring of 1993, students (including myself) from Dr. C. Ray Jeffery's class on environmental criminology gathered data on environmental factors which might be influencing crime in Tallahassee's zone 7. Zone 7 is a Tallahassee Police Department designation, and is the zone with the highest crime rate in Tallahassee, Florida. It was concluded from the data gathered for that study that the address with the highest crime rate within zone 7 was an apartment complex, and it had more crimes, including more burglary, occur in 1992 than the public housing areas that were also located in zone 7 (Clontz, 1993 unpub). Although at first surprising, this conclusion seemed to parallel Reppetto's Boston study which stated that the burglary rate for large multi-family units (private) was 37/1000 but for public housing was 34/1000 (Reppetto, 1974 in Poyner, 1983). Furthermore, Maguire and

Bennett (1982: 21) pointed out that the seeming paradox of "poor areas but not poor individuals, suffer the highest rates - has been explained in that offenders tend to select the most affluent targets within any given area."

This finding inspired the exploration of apartment residential burglaries in zone 7 to see if this phenomenon would hold up against scrutiny of all the apartment complexes and two years of data. It was further hoped that other trends might be uncovered.

History

American criminology is rooted in the Chicago school and the works of Shaw and McKay (Brantingham & Jeffery, 1991). Shaw and McKay's research was based on the earlier works of Burgess and his "urban theory" (Brantingham & Jeffery, 1991: 229). Burgess described environmental factors as the core processes in his theory and concluded that "geographic factors were the most important to the understanding of delinquency" (1916: 726; in Brantingham & Jeffery, 1991: 229). Shaw and McKay, however, "turned the study of human ecology into a study of *individual offenders*, not *crime* areas (Jeffery, 1971:189)," ignoring the offense and

its physical setting. Thus, the influence of the Chicago School's Shaw, McKay and Sutherland shifted the study of crime away from the physical environment and toward the offender (Jeffery, 1971). For most of this century, "the predominant approach to crime prevention by criminologists [became] aimed at changing the criminal rather than the crime situation" (Poyner, 1983: 5).

In this new movement, positive theorists saw human behavior as irrational and deterministic (Brantingham & Jeffery, 1991). The study of law, the criminal decision making process, the target and location became irrelevant (Brantingham & Jeffery, 1991). Criminology briefly shifted to the study of psychology and biology. The offender had "personality abnormalities that must be treated and corrected" (Waller & Okihiro, 1978: 4). Quick disenchantment with the results of research from this direction led American sociologists in the 1920s, especially Chicago "schoolers", to enter the field of criminology. Psychobiological explanations became abandoned altogether, thereby narrowing the focus of criminology even more, and focusing instead on the "search for *social* forces and processes that shape criminal motivation" (Brantingham & Jeffery, 1991: 234, *italics in original*).

Criminology shifted to the *social environment* as the cause of crime and

criminality. Because

"directly *spatial* explanations were *a priori* excluded from consideration by the theoretical structure criminologists,... [This resulted in] a major dysfunction between data and theory, a collapse into the problems of the ecological fallacy, and the sort of sterile exploration of spatial data about crime..." (Brantingham & Jeffery, 1991: 235, italics in original).

The 1970s saw the next wave in criminology: the neoclassicist movement. This harkened the return to classical school criminology and its belief in the rational criminal who must be deterred or punished. Born from the ideas of the seventeenth century, specifically from "reformers who saw the purpose of the law as social control and the betterment of humankind through effective social control" (Jeffery, 1990:64), the concepts of the classical school of criminology were based on three assumptions: "social contract theory, hedonistic psychology, and utilitarianism" (Jeffery, 1990: 65).

Grounded in the ideas Hobbes and Locke, social contract theory assumed that humans lived in anarchy, driven only by a "survival of the fittest" mentality and no innate morality, but agreed to enter a contract together sacrificing some freedom in

order to gain security and a more orderly existence. Hedonistic psychology was Bentham and Beccaria's concept of human nature where human conduct was based on "the self-interested pursuit of pleasure and the avoidance of pain" (Gottfredson and Hirschi, 1990: 50). Hedonistic psychology assumed free will and rationality on the part of the actor and that this self-interest is the first priority (Gottfredson and Hirschi, 1990). The last assumption of the classical school, utilitarianism, was the notion of the most good for the greatest amount of people. Crime was seen as a natural result of the pursuit of pleasure which could only be halted with the right amount of pain. To accomplish this, the classical school moved away from retribution and toward punishment for individual and general deterrence. In classical criminology, crime prevention meant "increasing the potential cost to the offender" (Waller and Okihiro, 1978: 4). The neoclassicists, by abandoning positivism and returning free will to the criminal, took up, once again, the study of law. As society struggled to eliminate rehabilitative models from the criminal justice system, the criminal justice system was failing in its attempt to halt crime. The "lack of success of both social policy and of criminal justice measures in reducing criminal behavior... led to much greater interest in approaches to crime prevention

which are directed more at the circumstances of the crime itself..." (Poyner, 1983:

6). Studying target and location was again acceptable thereby allowing the return for environmental criminology.

Social Control

A revival of writings about crime prevention were found in the "architectural approach" which included the works of Angel, Newman and Jacobs (Jeffery, 1971). In 1961, Jacobs wrote on the effect of street use on crime. She proposed that direct surveillance by neighbors of their streets, created a safe environment. She felt neighborhood designs should endeavor to increase public surveillance (Jacobs, 1961; Bennett and Wright, 1984). She argued for the mixture of public and private land use as is common in Europe, short block lengths and other characteristics which would create an area in which activity occurred around the clock. This constant use of space would provide the casual surveillance she referred to as "eyes on the street" (Jacobs, 1961). Potential criminals would perceive this sense of responsibility and willingness to intervene that community members had towards their neighborhood and each other, and consequently they would be deterred (Greenburg and Rohe,

1984).

Angel (1968) paralleled Angel's ideas of witnesses, surveillance and community awareness and believed crime rates were related to the social and physical environment, territoriality, accessibility, and the behavior of victims. Deterrence against criminal activity was provided by witnesses, surveillance and community awareness.

Jacobs' sense of responsibility and willingness to intervene was later called "territoriality" by Newman. Newman studied crime prevention through environmental design in 1972 and expanded on Jacobs and Angel, expanding the concept of "personal space," then expanding this concept to the neighborhood level and labeling it "defensible space" (Newman, 1972). Newman's defensible space theory contained four aspects: territoriality, surveillance, image, and environment (Newman, 1972). Newman saw the erosion that urbanization created on traditional social control mechanisms (Mayhew, 1979). He saw "defensible space" as a model for returning to citizens a physical manifestation of their community's social fabric that would defend itself (Greenburg and Rohe, 1984).

Newman studied the inner city multi family unit. He felt that the architecture

created an impersonality which in turn provided the environment for crime. His theory has been criticized by many (Mayhew, 1979; Taylor et al., 1980) because of his reliance on human nature and the instinct of territoriality. These concepts were considered abstract and difficult to quantify (Mayhew, 1979).

Jacobs', Angel's and Newman's theories should be categorized as social control theories because of their reliance on reviving the community's natural social control mechanisms. Although these works contributed to crime prevention through environmental design, the theories were not rooted in criminology and tended to be one-dimensional because they focused on a single factor.

In criminology, theorists began re-examining the physical environment in order fill the gap of failure of previous approaches. Briar and Piliavin wrote in 1965 (Bennett & Wright, 1984: 17) on delinquent behavior and its motivation calling it "typically episodic, purposive and confined to certain [environmental] situations." Gibbons (1971: 271; Bennett and Wright, 1984) stated "criminality may be the response to nothing more than provocations and attractions bound up in the immediate environment." Mayhew et al. (1976: 2) specified that "stimulus conditions, including opportunities for action presented by the immediate

environment, are seen to provide - in a variety of ways - the inducements for criminality." They went on to say:

"...we believe that criminal behavior consists of a number of discrete activities which are heavily influenced by particular situational inducements and by the balance of risks and rewards involved" (Mayhew et al., 1976: 6).

In other words, the physical environment created the opportunity for crime. This reflected Jeffery's writings (e.g. 1971) which emphasized learning theory as well as biology and physical environment. Even Gottfredson and Hirschi (1991), in proposing a new theory of "self-control" to fill in gaps left by Hirschi's social control theory, conceded that crime occurred because of circumstantial and situational factors and integrated rational choice, operant psychology and other biosocial factors just stopping "short of proposing genetic or other biological explanations" (Grasmick et al., 1991: 6). They further explained that motivation to commit crime was not a variable but that free will and environmental opportunity were. (Gottfredson and Hirschi, 1991; Grasmick et al., 1991).

Crime Prevention through Environmental Design: Opportunity Theory

Neither the positivists nor the neoclassicists were very successful in reducing crime (Waller & Okihiro, 1978: 5). In 1971, C. Ray Jeffery wrote in *Crime Prevention through Environmental Design*:

"if punishment and treatment are failures: and if retribution is a nonutilitarian answer to social deviance, then the logic of the situation demands a new approach to crime control.... the experts are advocating a return to retribution and the eighteenth century. A better solution is possible: crime prevention." (1971: 36)

Brantingham and Faust identified three levels of crime prevention in 1976: primary, secondary and tertiary. They borrowed the three levels from medicine, where they were used to describe prevention steps for the treatment of disease. In criminology, primary prevention would require altering the conditions that would originally precipitate maladaptive behavior to occur (Brantingham and Faust, 1976). Primary prevention would involve changing the social, biological or physical environment so that the potential criminal's opportunity or capability for

maladaptive behavior never originated. Secondary crime prevention would involve the early identification of maladaptive behavior and the subsequent administration of a treatment or rehabilitation to eliminate that behavior. Many current youth programs such as D.A.R.E. which are taught in high risk areas and boys clubs which aim at high risk youths attempt to identify and prevent potential violators. Finally, tertiary prevention would involve identifying criminals after the fact and punishing, treating or rehabilitating them in such a way that they would not commit further violations. This final form of tertiary prevention, reflected in neoclassical criminology, is the preferred method of our criminal justice system.

Describing the characteristics of his crime prevention program, C. Ray Jeffery stated: "It will focus on the *environment* in which crimes are committed, and on the interaction of the organism with his environment..." (1971: 37, italics in original). This evolved and became the mainstay of Jeffery's bioenvironmental theory of criminology. Bioenvironmental criminology summarized criminal behavior and behavior in general by stating "depending on the structure of the brain, behavior may be innate, innate with some modifications by experience, or totally based on association of an S - R type" (Jeffery, 1992: 507). In *Crime Prevention through*

Environmental Design, Jeffery advocated the analysis of the *crime site* so that its physical characteristics could be identified and then modified in such a way that it would no longer provide the stimulus to the potential offender (Jeffery, 1971). In other words, remove the opportunity by removing the potential targets. Although Jeffery coined the term "crime prevention through environmental design," the phrase was usurped by the government and no longer implied Jeffery's original theory. It took on the restrictive meaning of crime prevention through target hardening. Because of Jeffery's partial focus on target removal, some criminologists renamed this aspect of his theory "opportunity theory" (Scheidtger, unpub).

Crowe (1991: 29) defined crime prevention through environmental design as the manipulation of the physical environment "to produce behavioral effects that [would] reduce the incidence and fear of crime. These behavioral effects [could] be accomplished by reducing the propensity of the physical environment to support criminal behavior." Hough et al. described it as specific "management, design or manipulation of the immediate environment in which crimes occur in a systematic and permanent way..." (Hough et al., 1980: 1; Bennett and Wright, 1984). All of these definitions expressed that crime prevention should be accomplished by

changing the physical environment in such a way so that the opportunity for crime was removed.

In *Crime as Opportunity*, Mayhew et al. (1976: 8) affirmed that "analysis of the opportunities afforded by the abundance of property or by people's patterns of activity might be of greater value in explaining the differences or changes in crime rates." They specified that opportunity was made up of "occasion" (conditions necessary for an act to be committed) and "temptation" (conditions subjectively perceived as favorable to action) (Mayhew et al., 1976: 7). They summarized that opportunities depended on "abundance of goods" and on the "physical security of the object," and that they were mediated by "surveillance" (Mayhew et al., 1976: 6-7). The goal of the opportunity theorist was to manipulate the environment so as to reduce crime opportunities. Greenburg and Rohe's (1984) studies of the effects of environmental design on residential crime found little support for social control theory and great support for opportunity theory.

Rational Choice, Limited Rationality

Recent theories in environmental criminology can be divided into rational

choice, limited rationality and routine activities. Rational choice theory, which is really the same as economy theory, saw the offender as weighing perceived risks and making choice judgments before committing a crime (Cromwell et al., 1991). The economists call this utility and cost (Becker, 1968). Brown and Altman (1981: 64) described the process of residential burglary as involving "sequential decision-making judgments by the burglar about the probable success he may encounter in crossing a series of boundaries surrounding any residence." Studies which supported rational choice included Reppetto (1974), Shover (1972b), Walsh (1986), and Bennett and Wright (1984).

"Situational crime prevention" was coined by Clarke and Mayhew in 1980 (Clarke, 1992). Mayhew felt crime could be prevented or "designed out" through target hardening, target removal, removal of means, reducing the payoff, surveillance, environmental management, access control, etc. (Clarke, 1992). Since situational crime prevention was based on a criminal's rational choice to commit a crime (Bennett & Wright, 1984), it became subsumed under "rational choice" theory. Hirschi (1986) saw rational choice theory as a supplement to his general theory. It was a matter of events vs. involvement (Cornish and Clarke, 1986).

Rational choice was the specific explanation of an event whereas social control theory explained the general concept of involvement in crime and other antisocial behaviors. Rational choice was a neoclassical theory: all behavior was rational and was based on maximizing pleasure and minimizing pain. The goal of the rational choice theorist was to provide enough pain or cost to deter the potential offender. Bennett and Wright pointed out, however, that "unless a preventative measure is perceived by potential offenders as a constraint on offending, it is unlikely to have a preventative effect" (1984: 5).

The difference between rational choice and social control theories was that social control theories focused on the strategy of enlisting the community to enforce or control the behaviors of others. Rational choice implied that the criminal was not influenced by the community but by his or her own perceptions of cost and benefits. Opportunity theory in contrast, only focused on the physical environment and whether it provided the target or opportunity for crime. It did not focus on an offender's motivation to take the opportunity.

A hybrid should be mentioned as well. Limited rationality was proposed by those who were not satisfied with the idea of a pure calculating economic criminal

but rather saw a criminal that took advantage of the situation and made tactical (short sighted) as opposed to strategic (long sighted) decisions. It was surmised that in vitro techniques and retrospective interviewing used by researchers who supported rational choice might have imparted a false level of rationality and organization to the criminal (Cornish and Clarke, 1986). Cornish and Clarke described rational choice theory as follows:

"[T]he term 'rational' emphasizes the notion of strategic thinking - of processing information, of evaluating opportunities and alternatives: the term 'choice' emphasizes the notion that criminals make decisions; and the term 'perspective' stresses that the approach is not intended as a theory but as an organizing framework - a way of rearranging existing theory and data to throw new light on criminal behaviors." (Cornish and Clarke, 1986: vi).

They felt criminals made decisions and choices somewhat rationally, and that generally criminals were "constrained by limits of time and ability, and availability of relevant information" (Cornish and Clarke, 1986: 1). Because people processed

only a limited amount of information and made decisions on what little information they had, the criminal could only have a limited rationality. Maguire (1982) found house burglars were neither very rational nor irrational but were "middle-range." Shover (1972) and Cornish and Clarke (1986) believed that researchers had a false impression of rationality, and that gambling was a better term. Bennett and Wright (1984) recognized limited rationality and believed burglars behaved rationally under their present condition and state of mind.

Routine Activities

Routine Activities theory examined how day to day activity brought together potential targets (victims) and potential offenders. Working, shopping and going out for entertainment exposed potential criminals to new opportunities for crime. Felson described routine activities as part of opportunity theory but as the opposite of Hirschi's theory. Where Hirschi recounted a stable criminal element and changing opportunity, routine activities advocated a wavering offender and abounding opportunities. Felson (1986: 121) went on to say that "a criminal act has three minimal elements: a likely offender, a suitable target, and the absence of

capable guardians against crime." He described a fourth element as someone who could get a "handle" on the offender, someone who had control over the offender such as his family or perhaps his boss. This vacillation was described in Matza's (1968) theory of drift. Routine activities could be categorized as a theory of drift.

Brantingham and Brantingham (1981) incorporated the ideas of routine activities in their model. They described nine patterns of crime which could pervade a city or area. Older cities would have a central core of crime. Newer cities would have a more dispersed pattern of crime. New cities with areas of mixed commercial and shopping areas dispersed among residential areas would have higher property crimes as the potential criminal would be exposed to more areas in his or her daily activities of shopping, working and seeking entertainment, and targets could be found closer to his or her residence. The development of major transportation arteries would provide easy access to targets and a common pathway to new targets. Areas with a grid network would have higher crime due to easier accessibility. Crime would be higher around low income housing which was more densely populated thereby providing more crime opportunities. This was supported by Hindelang's (1978) finding that lower income groups had a higher criminal

probability than other groups. As cities shifted work areas into fringe suburban areas, those areas would show an increase in crime. Crime would increase around sports complexes especially those built around residential areas. (In April 1994, CNN news reported that crimes such as car theft and car burglary skyrocketed during sporting events in downtown cities such as Baltimore, Maryland.) The last pattern of crime identified by Brantingham and Brantingham was that red light districts would have high crime associated with their area and dispersing the districts would move their associated crime with them. Potential criminals would become exposed to more areas as they traveled to and from red light districts and the districts would come into contact with new potential offenders.

Summary

Opportunity theory focused on the target or opportunity presented to the offender. Rational choice focused on the offender's ability to weigh costs and benefits and then make decisions based on his analysis. Routine activities theory focused on how the offender moved daily through time and space becoming aware of new targets and opportunities. All these theories offered explanations as to the cause of burglary.

Brantingham and Jeffery (1991: 227) proposed that contemporary criminology as a theory should deal "with all four dimensions of the criminal event: law, offender, target and location." Environmental criminology should be the study of "the facts of objective and perpetual space, of urban form, of offenders and target opportunities, and the roles that all these play in criminal events." (Brantingham and Jeffery, 1991:237). The criminal event must be studied as a whole consisting of the target or opportunity, the crime in time and space and the neurological functioning of the offender.

Literature Review

Defensible Space / Social Control

Some research in crime prevention has been theory based and other research has not. All, however, can be associated with one theoretical orientation or another. Newman's concept of territoriality has been tested by many. Brown and Altman supported "defensible space" by concluding that the burglar assessed territoriality cues and was more unlikely to intrude areas with primary territorial markings. Waller and Okihiro (1978: 51) found that "the most important predictor of a high

burglary rate [was] a high percentage of the male population 15 years of age and over who were single." They interpreted this as supporting social control theory by indicating low social cohesion (Waller and Okihiro, 1978). They found, however, that social cohesion differentiated between areas of high and low burglary "at only a marginal level of significance" (Waller and Okihiro, 1978: 51). Waller and Okihiro concluded that their research on apartments did not support defensible space and social control. Location of the apartment in the building, affluence, and the presence of a doorman "were much more important factors in determining the likelihood of victimization than items such as social cohesion" (1978: 102).

Newman's "defensible space" was developed while studying the "multifamily residential environment," or rather, apartments, but had little success in being validated through research (Poyner, 1983). Greenburg and Rohe's (1984) studies found little support for Newman's social control concept of defensible space. Newman and Frank's research in 1980 found building size (a measure of social cohesion) did not correlate with higher burglary but accessibility did. Newman acknowledged this lack of support for social cohesion in his later writings. Newman replaced territoriality with "accessibility" (Poyner, 1983).

Studies testing Jacob's version of social control (surveillability versus territoriality) have shown mixed results. Waller and Okihiro's findings appeared "to reject the hypothesis of defensible space and accept those of Jacobs" (1978: 60). However, Mayhew et al. (1979: 6) found that "activity alone does not necessarily impede crime... In more socially disorganized areas [it] may even encourage crime by providing 'cover.'" Mayhew et al. (1976: 1) stated "that by and large, however, offenders seem to be deterred by the actual or potential presence of other people."

Hollander et al. (1980) found high crime was related to high vacant lots, higher multifamily units, more major thoroughfares, mixed land use, and less private parking/more street parking. According to social control theory, these provided casual surveillability (eyes on the street), but these factors also enhanced the greater anonymity of the people moving through the area (greater opportunity for cover and concealment), thus providing a better opportunity for crime. Hollander's findings best fit within explanations provided by opportunity theory and Brantingham and Brantingham's routine activities.

Rational Choice

In support of rational choice, Poyner (1983) concluded that "burglars appear to

avoid the risk of personal confrontation, as it has been found that unmanned alternatives to doormen or security guards are far less effective." Mayhew et al. (1979: 3) suggested that "offenders avoid being seen by those who will be familiar with, and are committed to defending the property, persons or environment under threat." In further support of rational choice, Waller and Okihiro (1978) concluded through burglar interviews that burglars wanted to avoid confrontations. Avoidance of risk showed rational thought, but also supported social control theory because the risk of being seen involved surveillability and the risk of someone defending the property involved defensible space.

Burglar interviews also showed support for rational choice and opportunity theories by emphasizing the importance of cover. In other words, cover or concealment provided opportunity and burglars were rational enough to know that "cover was good."

"The ideal situation... is for this land to generate pedestrian traffic.

Parkland, golf courses, school grounds and industrial property are especially enticing because they place a lot of unfamiliar people in the neighborhood" (burglar interview, Rengert & Wasilchick, 1985: 5).

Burglars further rationalized that they "shouldn't operate where they are well known" (Rengert and Wasilchick, 1985: 97). Scarr (1973: 11) found rationality among his burglars and concluded that "most students of burglary still regard burglary as an essentially passive crime in which the burglar tries to avoid any form of contact with the victim." Scarr additionally found that burglars specialized in day, night, hotels, resorts, and apartment burglaries. These burglars calculated their method of attack, and were not taking any opportunity that presented itself; they sought out specific targets.

Studies pointed to the importance of the availability of desired goods to the commission of burglary. These discoveries described a rational thief who weighed costs and benefits. Waller and Okihiro (1978: 50) focused their research on three concepts, one of which was the "availability of goods to be stolen or dwellings to be entered." Scarr (1973) found that the most common types of goods stolen consisted of entertainment systems and money. Rengert and Wasilchick's (1985: 95) interviews uncovered that "pillowcase burglars" stole things which easily fit inside a pillowcase such as money, jewelry and silver. Interestingly, pillowcase burglars felt that entertainment equipment was for amateurs (who had not yet

refined their decision-making and were impulsive). Maguire and Bennett found that the most frequently stolen items were cash, entertainment equipment and jewelry (1982: 18).

Scarr (1973: 72) found that the "Beltway gang" of Washington D.C. did not bother with apartments which were less than \$250 in rent. It seemed burglars consciously decided whether a hit was worth their while. As mentioned earlier, Waller and Okihiro (1978) concluded that affluence was a predictor of the likelihood to be victimized. In these findings, the burglar was a calculating criminal obviously capable of rational choice: (s)he chose the "big stuff."

Rengert and Wasilchick (1985) found the amateur was deterred by prevention strategies or perceived risk, but the professional was deterred by low gain (one ways the cost ; the other, the benefit). Sutherland's professional thief stated that "every act is carefully planned" (1937: 3). Shover's burglar interviews had mixed messages. Burglars stated that the location should provide privacy, cover, more than one escape route and no alarm (Shover, 1971: 107). They also stated their "belief in both the ability and necessity" to apply rational thinking (Shover, 1971: 114). Contrarily, they gave examples of crimes committed spontaneously because of

irresistible opportunity. The problem with rational choice theories was that unless the researcher entered the burglar's mind, (s)he could not know whether the burglar rationally decided to break in at the time or took advantage of opportunities (in the sense of rational choice theories) or was exposed to and tempted by the opportunities through daily wanderings (in the sense of routine activities theories).

Limited Rationality / Opportunity

It is difficult to separate empirically which studies support limited rationality and which support opportunity or routine activities. Limited rationality and routine activities focused on the burglar while opportunity focused on the target. Scarr (1973: 3) defined burglary as "...a crime against a place, or against a property, not against people... a crime of opportunity is reflected in the environment -- both physical and social -- through which the burglar moves." The drifting criminal was more apt to take advantage of opportunities presented. In taking advantage of opportunities, the criminal resorted to some form of decision-making. Dermot Walsh's (1986) study of victim selection procedures among economic criminals found support for limited rationality and not for the rational choice perspective. Other research supported both rational choice and limited rationality modes.

Feeney (1986) found that impulsive robbers were thwarted by prevention schemes involving increased security personnel, but bank cameras and other mechanical deterrence measures seemed to be of low value. Many conclusions spoke of opportunistic amateurs and more rational career burglars (Rengert and Wasilchick, 1986).

Shover's burglars stated in interview that "if a good opportunity comes along, say, with two individuals coming from the bank with a bag of money -and its a quick grab- I'm for it" (answer from interview, Shover, 1971: 44). The burglars also described burglary as akin to gambling and a good burglar as knowing the market (opportunistic). Shover concluded :

"If we can safely assume that criminal acts frequently occur as responses to perceived opportunities then the significance of [burglar] observations [of opportunities]... would be apparent. For what this makes clear is that the very existence of opportunities for deviance is often dependent upon having learned to perceive them, [and] is dependent upon certain types of learning experiences. Therefore, a career in crime cannot be seen as merely a series of isolated criminal

acts. Instead it must be seen for what it is: an experience which may radically alter both: (1) one's perceptions of the amount of illicit opportunity present in everyday life, and (2) the evaluation of the risks involved in criminal activities." (1971: 187)

Studies supporting the importance of concealability and cover gave credence to theories focusing on the burglar's ability to make rational choices and to theories which stressed the significance of a presented opportunity. Scarr's study of burglary in Washington D.C. and surrounding areas supported the importance of concealability to the burglar. He found that "almost 50% of all residential burglaries... occurred between 10:00 a.m. and 4:00 p.m." (1973: 104). This corresponded with Reppetto (1974) and Maguire and Bennett's (1982) research which found higher burglaries during the times that residents were at work or shopping. Victim surveys revealed that victims residences had slightly higher obstructions consisting of trees and shrubs (Scarr, 1973). Victims also claimed that there was more than one type of parking available (street and lot), that their residences had slightly more wooded areas in the rear than nonvictims, and that they

were more likely to be surrounded by nonresidential areas . Victim surveys further identified that victims claimed their areas were very dark more often and that vehicular and pedestrian traffic was more sporadic. These findings indicated a rational burglar who analyzed his environment, and they indicated an environment with ample opportunity for crime to occur. Finally, since the areas were more likely to be surrounded by nonresidential areas in which a potential burglar may work or play, there was evidence supporting routine activities theory's perspective of surveillance of target and opportunity.

Cover and concealment in the environment could be interpreted as supporting social control, rational choice, opportunity and routine activities. The underlying reason is that rational choice and routine activities contained the premise of opportunity theory within them: the routine traveler and the rational thief take advantage of opportunities. An opportunity included a favorable environment. The presence of cover and concealment ensured the target could be removed without incidence. A target as well as a favorable environment supported opportunity theory. In addition, if cover and concealment was viewed as a dimension of the absence of surveillability, it could be used to support the surveillance perspective of

social control theory.

Further support for the importance of cover and concealment to the commission of burglary was found in research of residential burglary (Waller and Okihiro, 1978). Surveillability (a lack of concealability) was statistically significant for houses (apartments were not measured) (Waller & Okihiro, 1978). Maguire and Bennett (1982) found that of houses burgled in the Thames valley, 75% were unoccupied. Reppetto (1974) found that dwellings which were unoccupied for 35 hours or more a week had three times higher rate than others in Boston. Rengert and Wasilchick (1985) found that burglary rates matched the working woman's schedule and the homekeepers shopping times. All these findings emphasized the opportunities presented by unoccupied dwellings and low surveillability/high cover and concealment.

Studies other than residential burglary research, also emphasized the effect of the physical environment on crime. Jeffery, Hunter and Griswold conducted a study on the physical environment and its effect on convenience store robberies in 1985 (Hunter, 1990). The findings showed that surveillability or the lack of concealability proved to be significant in the prediction of stores with high robbery

rates. Hunter's reassessment of the study in 1990 upheld the importance of surveillability/ lack of concealability to the burglar. A Gainesville Police Department study in 1985 concluded by finding the importance of having two rather than one store clerk as well as other measures which reduced the burglar's ability to conceal her or his actions. Characteristics of the physical environment played a significant role in crime prevention.

Lastly, literature emphasized the importance of ease of access which supported opportunity theory. Rengert (1981) argued for the inclusion of physical features of accessibility as an important consideration of opportunity theory. Ease of access supported opportunity theory because a target had to be obtainable in order to be taken. Winchester and Jackson (1982) found accessibility related to burglary rates. Evidence supported ease of access to the target as instrumental to higher burglary rates. Bevis and Nutter (1977) evaluated 5 street types including intersections and cul de sacs and found that burglary rates were higher on intersections than on cul de sacs. Clontz's (1993, unpub) data also showed a high association between burglary rates and the type of street. Rengert and Wasilchick (1985) concluded that corner property or properties with empty lots around them were preferred. Scarr's (1973:

199) victim surveys showed that victims were more likely to live on corners than nonvictims. Corners provided easier accessibility.

Accessibility by the ease in which burglars entered a premise was found to correlate with burglary and support opportunity theory. Scarr's (1973: 104) research showed that the place of entry was "generally via a door or a window." Waller and Okihiro (1978) found that in apartments, 71% of the break-ins were through the door. Waller and Okihiro (1978) found that 48% of victims versus 28% of nonvictims in apartments showed carelessness in such things as leaving doors unlocked or windows open, thus providing plenty of accessibility. Clontz's (1993, unpub) analysis of data gathered on burglaries in zone 7 also found accessibility to be correlated with burglary rates.

Routine Activities

Accessibility to targets by the mere proximity of a pool of potential burglars has been found to play a role in high burglary rates. This discovery sided with routine activities theory because the pool of potential burglars was presumed to pass by its targets on a daily basis allowing for plenty of time to observe opportunities. Sutherland's (1937: 157) professional thief stated that "probably a majority [of

thieves] live in or near the central business district." Since the interviewee was referring to thieves who operated in that area, the offenders were conducting routine activities as well as crime in their crime territory. "The highest concentration of burglaries appear to occur in or close to socially disadvantaged housing areas," and overcrowding, availability of single males and low income positively relate to burglary rates (Maguire & Bennett, 1982: 20). A high percentage of single males 15 years of age and over were the best indicator of a high burglary rate (Waller and Okihiro, 1978: 51). High density areas provided a larger population, therefore a larger burglar population, and they provided a richer target selection, thus generating more burglaries.

Scarr's (1973) findings that areas of higher burglary rates were more likely to be surrounded by nonresidential areas supported routine activities because mixed commercial residential areas would avail themselves to a burglar traveling to and from work and recreation areas. Rhodes and Conly (1981) identified two levels of attractiveness: target and spatial attractiveness. Spatial attractiveness referred to the familiarity the offender had with an area and supported routine activities. Transitional areas had the appeal of having lots of targets and good spatial

attractiveness.

Research on burglaries has been at best controversial with respect to social control theories, opportunity theories, rational choice theories and routine activities theories. Although the results have supported or refuted one or more of these theories, one pattern emerges in all of the research. Three characteristics surface in the data as the operationalization of the concepts behind the theories. Concealability and cover (or lack of surveillance), ease of access (or escape) and perceived presence of desired goods all contribute to an environment conducive to burglary. Depending on the theory one wishes to support, findings can be phrased in such a way to support most of the environmental criminology theories. This is because the theories overlap in their basic principles. Rational choice referred to the burglar's intent which was manifested in the wise choices (s)he made. These choices were made only in the presence of an identified target or opportunity. The discovery of the opportunity could have been happenstance due to a burglar's routine activities or it could have been sought out rationally and methodically. The opportunities might have tempted the thief due to a lack of social cohesion and surveillance on the part of the community, or the burglar may have taken advantage

of the opportunity provided by the environment in the form of the presence of desired goods, good concealment and cover and/or easy access. All these explanations are plausible but they are all rooted in Brantingham and Jeffery's simple statement that a crime involves the violation of a law, the violator, the target and location. It is difficult isolating one dimension from the other, and it is difficult for a theory to emphasize one aspect without some overlap.

Hypothesis

Scarr, while studying patterns of burglary, stated that:

"Burglary itself is behavior... it involves needs to be met, opportunities to meet them, perceptions of these opportunities, means to take advantage of such opportunities, satisfaction when needs are met, decisions about alternate routes to need meeting, and the existence of outside interference in the process" (1973: 3).

He specified the three elements of burglary as "needs," "knowledge of burglary technique" and "perceived opportunities" (Scarr, 1973). The U. S. Air Force identified three prerequisites as intent, capability and opportunity and recognized

that all three elements had to be present in order to commit an offense (U. S. A. F., 1990).

Intent and capability were elements of the burglar's behavior. Intent was a part of the socio-biological make-up of the burglar's behavior. Capability was behavior modified by learning and could be measured by the burglar's failure and success. Intent and capability were traditionally analyzed through burglar interviews and in vitro techniques.

Bennett and Wright (1984) concluded that the typical burglar had prior motivations and sought opportunities. In choosing to examine opportunity, Bennett and Wright (1984: 93) found that burglars considered "surveillability," "occupancy," "openness," and "cover" to be of primary importance in their decision to burglarize. Specific factors identified by Bennett and Wright (1984) included cover, the presence of neighbors, how far from the road the dwelling was, busy roads, occupancy, whether passers-by were stationary or watchful and escape routes. Although Bennett and Wright's research focused on the burglar's motivation, the importance of the physical environment in providing the right opportunity for burglary was evident in the items that the burglar analyzed. Mayhew et al. (1976:

6-7) summarized that opportunities depended on the "physical security of the object" (accessibility) and that they were mediated by "surveillance" (lack of cover and concealment).

Bennett and Wright (1984) made two assumptions: the decision to offend was somewhat situationally determined, and the burglar chose to offend. These were more logically expressed in Jeffery's (1990) conclusion that the individual reacted to her or his environment, but through a decision making process in the brain. Since one cannot peer into the brain (as of yet), the burglar's intentions (or manifestations of neurological functions) and capabilities (the burglar's learning, experience and success) were not studied. The research focused on the target and not the offender. Specifically, this research strove to study how certain characteristics of apartment complexes created the physical opportunity for burglary.

Two hypotheses were formed: (1) the opportunity for burglary was related to ease of access, and (2) the opportunity for burglary was related to the existence of concealment or cover. It was predicted that if the characteristics of an apartment complex provided easier access to its apartments, the complex would have a higher

burglary rate. If the physical environment of the complex provided ample cover and concealment (or the lack of surveillance), it would also have a higher burglary rate.

CHAPTER 2

METHODOLOGY

Definitions

Zone 7 was defined as having Monroe Street as its eastern border, Pensacola Street as its southern border, Ocala as its western border and portions of Green Tree Lane, Alabama Street and 6th Avenue as its northern border. It included all land within this boundary except land belonging to Florida State University. FSU property fell under the jurisdiction of its own police department.

An apartment *unit* was the apartment itself. A collection of units made up the apartment complex. An *apartment complex* was defined as a collection of dwelling units numbering twenty-five or more which could be rented by paying monthly payments, with one month being the minimum payment. These units were collocated within in a building or collection of buildings within very close proximity to each other thereby sharing parking areas, courtyards, swimming pools and sports areas. The complex had a name and a rental office. The units were furnished or

unfurnished; they may have had multiple rooms or a single room with an adjoining bathroom (dorm-type). Townhouses were not considered apartment complexes. The apartment complex was the unit of analysis.

The choice of size was based on the division used by Stauss and Lewman (1975) in their research of apartment complexes, on the PREIS apartment index and on Tallahassee's Office of Licensing. Stauss and Lewman subdivided apartment complexes as elevator buildings, low rise 12-24 units, low rise 25 plus units, garden types, furnished, condominiums, and cooperatives. Tallahassee's Bureau of Professional Regulation, Office of Licensing subdivided apartment units into transient and nontransient. Nontransient apartments were units for which a month's rent was the minimum payment and the stay was 32 days or more. The Licensing office further divided complexes by size discounting those below four units and categorizing the rest as 4-24, 25-50, 50-100 and so on in 50 unit intervals (telephonic communication).

Twenty-five or more units were chosen for this research in order to examine complexes which were more likely to have a defined space around them, a consistent application of landscaping and architectural design, a manager and a

variety of shared structures such as fencing, parking lots, and sports areas. Units below 25 not only were unlikely to have managers (O'Connell, 1989), they seldom advertised and frequently were not listed in the city directory. Managers were important because they usually provided "the best source of information" about the characteristics of the apartment complex such as rent, security and resident characteristics (O'Connell, 1989: 38).

The burglary numbers for this research were obtained from official Tallahassee Police Department data of residential burglaries. The definition used in this research was, therefore, from the Florida State Statutes. Burglary

"means entering or remaining in a structure or conveyance with the intent to commit an offense therein, unless the premises are at the time open to the public or the defendant is licensed or invited to enter or remain" (Florida Statutes, 1993: 810.02(1)).

The decision to use official data versus unofficial data brought with it the questions of representativeness. In Toronto "less than two-thirds of all residential burglary [was] reported to police" (Waller & Okihiro, 1978: 22). Maguire and Bennett (1982: 13) found that "... official figures represent[ed] somewhere between

one-quarter and one-half of all cases in which residents [thought or knew they had] been burgled." Although household burglaries were more likely to be reported to police than other crimes because of insurance requirements for receiving compensation, Bastian and Deberry's (1990) U.S. victimization surveys revealed a similar trend: 51% of household burglaries were reported to police .

Another problem stemming from the use of Tallahassee Police data was the possibility that calls to law enforcement officials were handled by the Leon County Sheriff's Office. Without compiling data from both agencies, it could only be assumed that the calls being diverted to the Sheriff's Office were at a consistent rate among all apartment complexes.

Even though the real amount of burglaries was hidden in police data, it was assumed that all apartment complexes in zone 7 suffered the same rate of underreporting, and that the reported amount was a fair indication of which apartment complexes had more burglaries. As for the accuracy of the police data, police discretion had been found to play only a minor role in the recording of burglary (Maguire and Bennett, 1982).

The burglary *number* was the average of the number of burglaries which

occurred at an apartment complex in 1992 and 1993. An average of the number of burglaries was taken as the burglary number because it was assumed that averaging would cancel out any natural variations, giving a more consistent representation. It was assumed that the apartment complexes did not change their characteristics from 1992 to the date of the research. Any wild fluctuations between the number of burglaries in 1992 and 1993, however, would have been cause to look for such changes as contributors to the fluctuation. No such fluctuations appeared while calculating the average burglary number.

The *burglary rate* was the average number of burglaries for a particular complex (the burglary number) divided into the number of units in that complex times 100. This yielded a percentage. In other words, if an average of 4 burglaries occurred at a complex with 40 units, the rate was 0.10 or 10%. The average amount of burglaries for each apartment complex was assumed to demonstrate the overall "burglarizability" of each particular apartment complex. The potential problem of this assumption was the creation of an "ecological fallacy" where the general characteristics measured might have not actually applied evenly to the individual crime sites (the apartment unit) in which the burglary occurred.

Sample

The unit of analysis was the apartment complex. A convenience sample was taken consisting of 39 apartment complexes. These included all the apartment complexes within zone 7 that had 25 or more units except Royal Oaks which opened in late 1993 and Cash Hall which had interior entry dormitories and exterior garden apartments. Cash Hall was eliminated because the police data used did not indicate whether the burglaries occurred at the garden apartments or the dormitories. The sample was verified by driving the zone, researching apartments in the city directory and referring to the PREIS Apartment Index (1982) for Leon County, Florida. The sampling universe of apartments of Leon county included 292 apartment complexes with a combined total of 17,284 units or addresses (telephonic communication -Bureau of Professional Regulation, Licensing, 1994). The office did not provide a smaller breakdown of complexes nor did it record complexes with four or less units. It was estimated that there were approximately 70 to 80 multi-unit complexes in zone 7 including those below twenty-five units.

TABLE 1:

APARTMENT COMPLEXES IN SAMPLE				
*% STDNTS		BURG RATE (%)	#UNITS	*RENT
98	1. BERKSHIRE MANOR	1%	142	\$400
00	2. CASA CALDERON	1%	112	\$00
100	3. CHAPEL TERRACE	6%	34	\$375
90	4. CHATEAU DE ROI	12%	42	\$300
98	5. CHATEAU DE VILLE	0%	104	\$400
90	6. COLLEGE PLAZA	0%	62	\$345
100	7. COLLEGEWOOD	0%	59	\$365
90	8. COLONY CLUB	5%	170	\$350
75	9. CONRADI HOUSE	1%	35	\$330
90	10. CONRADI HOUSE B	6%	35	\$330
80	11. CUMBERLAND FOREST	16%	44	+\$400
00	12.**EBONY GARDENS	4%	112	\$00
100	13. FLORIDA TOWERS	0%	53	\$425
95	14. FOREST HILLS	1%	192	\$325
95+	15. FOUR SEASONS	4%	96	\$315
00	16. **GRIFFIN HEIGHTS	4%	92	\$00
60	17. HERITAGE PARK	2%	100	\$375
99	18. HIGH PARK VLLGE	8%	142	\$669
100	19. HIGH POINT PARK	0%	152	\$315
60	20. JEFFERSON ARMS	1%	91	\$360

TABLE 1 (cont.):

*% STDNTS		BURG RATE (%)	#UNITS	*RENT
100	21. JEFFERSON TOWERS	2%	47	\$350
100	22. OSCEOLA HALL	1%	500	\$440
70	23. PARK POINT	2%	64	\$369
90	24. PARKWOOD	2%	46	\$365
66	25. PENROD	2%	60	\$365
100	26. PENWOOD/JEFF~	1%	54	\$270
95	27. THE PLAZA	3%	300	\$325
100	28. ROYAL OAKS	5%	42	\$624
100	29. ROYAL OAKS B	2%	42	\$624
95	30. ROYAL PAVILION	8%	60	\$860
100	31. SEMINOLE HOUSE	1%	168	\$285
100	32. SEMINOLE PLAZA	7%	42	\$300
100	33. SEMINOLE VILLAGE	0%	55	\$300
100	34. SEMINOLE TERRACE	10%	40	\$285
100	35. SENATOR APTS	1%	72	\$310
80	36. SPRING SPORTSCLUB	1%	185	\$365
100	37. UNIVERSITY COMMONS	4%	141	\$245
95	38. UNIVERSITY TOWERS	1%	167	\$310
100	39. WHITEHALL	10%	50	\$675

mean=3.5%

* PERCENTAGES AND PRICES OBTAINED FROM FACILITY MANAGEMENT

**PUBLIC HOUSING/HUD

Operationalizations

Dependent Variable: Burglary Rate

The dependent variable was the burglary rate and was measured on an interval scale. It was used in the analysis of all the characteristics. The burglary number was computed averaging Tallahassee Police Department data on burglaries in zone 7 for 1992 and 1993. The burglary rate was computed after gathering information on the amount of apartment units per complex. The number of units was gathered by asking the rental office, examining the PREIS report (1982), using the city directory (1993) and perusing through the advertisements in the Apartment Guide (1994). The averaged burglary number was divided into the number of apartment units and multiplied by one hundred.

Independent Variables: Apartment Complex Characteristics

Accessibility. The easier the access, the greater the burglary rate would be. Apartment buildings which had no security or twenty-four hour managers were predicted to have higher rates than complexes which did. Apartment complexes with wooden doors, sliding glass doors, patios and balconies (patios on first floor and balconies on other floors), easy access windows, window air conditioner units,

exterior access to apartments, and no deadbolts were expected to have greater burglary rates. Motel type exterior entries versus exterior entries with private access, trees which provided access into apartments, none or poor fencing, multiple entries and exits into the complex, large easily accessible parking areas and complexes located on a corner were also expected to show higher burglary rates. Finally, accessibility by the mere proximity to a potential pool of burglars was measured.

The presence of 24 hour managers, door guards or security was recorded by asking the rental office or residents who were present during the collection of the data, or through the Apartment Guide (1994). The complex was considered to have security if a police officer or deputy who lived there performed occasional patrols as well as if the complex had hired part-time or full-time security. The types of doors, the presence of sliding glass doors, patios/balconies, easy access windows, window air conditioner units, exterior access, fencing (including partial fencing) and deadbolts were observed visually by walking around the apartment complexes and were recorded. Deadbolts were recorded as being possessed by all the apartments, some of the apartments or none of the apartments.

First floor windows were considered easily accessible if they had no iron bars or other restrictions blocking them or if they were not too small (smaller than one and a half foot square). Windows of other floors were accessible if they first met the previous conditions and could be reached because of exterior landings, walkways or stairs. A complex was considered to have a motel type entry if all the doors were accessed from the outside, all faced the parking lots or common areas and each floor shared an exterior landing or walkway that was accessed with common stairwells.

The climbability of trees was evaluated through observation as to whether trees provided access. If any trees (including one) were close enough to provide entry to an apartment window or balcony on a floor other than the first, the entire complex was considered to have trees which provided access. Fencing was considered a restriction to access if it enclosed the complex, was difficult to climb and had no holes. Difficulty included chain link with outrigger over seven feet, iron rails with no footholds over seven feet, or a privacy fence over ten feet. No trees or vegetation could abut the fence in such a way that an offender could use the vegetation to circumvent the fence.

The number of pedestrian and nonresident auto entries/exits was visually

counted and recorded. Nonresident auto entries were those that did not require a key or card to enter or exit. Parking was measured by observing whether street parking existed and on how many sides of the building the lots were adjacent. Apartment complexes with multiple buildings were all built with the same architectural layouts concerning parking lots. In each of the complexes observed, all the buildings had the same amount of parking surrounding them. If the parking lot surrounded two sides of each of eight buildings, it was recorded as having two sided parking. The location on the block (corner or otherwise) was observed and recorded. Proximity to a "potential pool of burglars" was computed by measuring the distance to public housing. The distance from public housing was used because it provided a reference point from which to measure, and it was generally located in the center of high density, low income areas which according to the literature (e.g. Waller and Okihiro, 1978; Maguire and Bennett, 1982; Brantingham and Brantingham, 1990) was associated with higher burglaries. The measurements were taken from a city planning map and the public housing units themselves were eliminated from this analysis. All measurements were transcribed into nominal scales for analysis.

Cover and concealment. Complexes with lots of places or opportunities for concealment would have higher burglary rates. This included the ability to blend because of a general anonymity among residents. Complexes with apartment unit entries which could not be viewed from the street or parking areas, with privacy fences instead of see-through fences, without peepholes (which could diminish the opportunity for concealment) and with vegetation which provided concealment were predicted to have higher burglary rates. Furthermore, complexes which were located on streets whose general pedestrian traffic patterns were medium to heavy, with mixed commercial neighborhoods or neighborhoods with many apartment complexes would have high levels of anonymity enabling the burglar to conceal her or himself by blending into the surroundings. Complexes located on side roads, or adjacent to wooded or vacant lots would have greater cover and concealment and show a greater burglary rate, too.

The existence of peepholes, the type of fencing, street type, and surrounding land were observed by walking around the complexes. Pedestrian traffic was rated by utilizing the observers' personal experience and familiarity with the areas and recording the general amount of traffic carried by the streets. The observers

subjectively evaluated whether pedestrian traffic was light, medium or heavy individually and compared their evaluations for reliability. All evaluations concurred.

The concealability of vegetation was observed for the entire complex and was based on whether vegetation abutted any windows or doors or provided concealment from the parking areas or street or whether it was high enough or opaque enough to hide a person. All the apartment complexes had consistent landscaping so that the vegetation, in general, was or was not concealing throughout the complex. All cover and concealment measures were coded and analyzed as nominal measures.

Control Variables

Time of burglaries, size of apartment complexes (number of units), rental prices, and percentage of students residing in the complex were examined as possible control variables. These were used to ensure any associations found would maintain their relationships and were not the product of a spurious or intervening relationship.

The police data used for this research listed a time for each of the burglaries.

The times of all the burglaries which occurred at each complex were averaged. The times were then recoded into hours from 06:01 p.m. to 6:00 a.m. and hours from 6:01 a.m. to 6:00 p.m. Controlling for time, all bivariate analysis was checked to see whether any associations would change.

Apartment complex sizes were recoded into seven categories: 25-50, 51-100, 101-150, 151-200, 201-250, 251-300, over 300. Based on findings in the literature which showed an increase of burglaries for larger units (e.g. Hollander et al., 1980), associations were checked to ensure they maintained their relationship even among apartment complexes of different sizes.

Correlations were also checked to see if they held up in complexes with different student percentages. The managers' estimate of percentage of student residents was recorded in quarters (0-25%, 26-50%, 51-75%, 76-100%). The rental office was utilized to provide the rental price of the smallest unit and the percentage of students which resided in the complex. The price of rent for the smallest unit was recorded as being less than \$200, \$200-250, \$251-300, \$301-350, \$351-400 or over \$400.

The observers consisted of the researcher and an assistant. The assistant was

trained in order to assure proper recording of observable facts. The observers traveled together to the complexes, and each observer consistently recorded the same portion of the survey instrument at each complex. On random occasions, the researcher and assistant each completed the entire survey instrument, recording all the variables of a complex. These redundant checks were then evaluated to ensure reliability.

CHAPTER 3

ANALYSIS

The dependent variable was the burglary rate and the independent variables were the characteristics of the apartment complex. It was hoped that this exploratory analysis would show some relationship between the residential burglary rate and one or more of the physical and environmental characteristics of the complexes, thereby allowing for the hypothesis that the characteristics effected the overall burglary rate of the apartment complexes in zone 7.

Independent characteristics were coded into nominal measurements consisting mostly of dichotomies. Since the burglary rate was an interval measure, correlations were measured with eta squared (η^2). Eta and eta squared measure correlations between nominal independent and interval dependent variables. Eta squared also has both a VAF (variance accounted for) and a PRE (proportion reduction in error) interpretation (Gould, in press). *Variance accounted for* is the "proportion of the

variation of [the dependent variable] that can be accounted for by the joint variation of [the dependent and independent]" (Gould, in press: 6). The dependent variable was kept at the highest level possible for analyzing correlation because downgrading it to an ordinal or nominal measure would give much less information, and a lower level might have inflated the correlation (Gould, in press).

Because the sample was a convenience sample, tests for statistical significance tests were not necessary as the sample was not randomly selected (Morrison and Henkel, 1970; Zeisel, 1985; Singleton et al., 1988; Gould, in press). However, statistical significance was provided as a reference because of the small sample sizes. Because Pearson's r and eta are identical in dichotomous cases, Pearson's r was used to test for statistical significance and to check the direction of associations.

Many of the characteristics proved to be homogeneously distributed among the sample. This made it very difficult to compute correlations of any meaning. In response, percentage tables comparing complexes with the six highest and six lowest burglary rates were used to corroborate any findings due to the small sample size or to point out trends not visible in the original sample. Data analysis consisted of descriptive statistics along with comparisons of the deviant cases, and the results

were displayed in frequency/percentage tables, bar charts and maps.

Univariate Distributions

Dependent Variable

The burglary rate was chosen over the burglary number for the dependent variable because it provided a common denominator when comparing different sized apartment complexes. Since the rate was a percentage, 0.04 meant 4% of the apartments had been burglarized regardless of the complex size. There was, however, no great difference between the distribution of the two. Compare the distributions of the burglary rate and the burglary number.

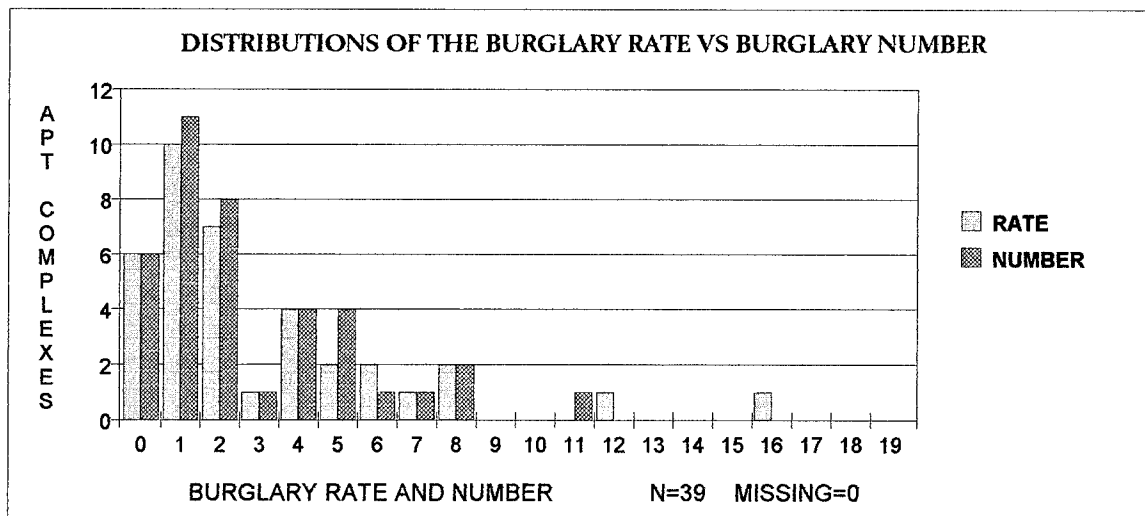


FIGURE 1.

Although the burglary number was slightly more normal than the rate, both

were skewed to the right as most complexes had low burglary rates. The following two frequency/percentage tables more clearly show the distribution of the burglary number and rate.

TABLE 2:

AVERAGE NUMBER OF BURGLARIES 1992/1993		
BURGLARIES	FREQUENCY	PERCENT
0	6	15%
1	11	28
2	8	20
3	1	3
4	4	10
5	4	10
6	1	3
7	1	3
8	2	5
11	1	3
TOTAL	39	100%

TABLE 3:

BURGLARY RATE (BURGLARIES/ NUMBER APARTMENT UNITS)		
RATE	FREQUENCY	PERCENT
0.00	6	15%
0.01	10	25
0.02	7	18
0.03	1	3
0.04	4	10
0.05	2	5
0.06	2	5
0.07	1	3
0.08	2	5
0.10	2	5
0.12	1	3
0.16	1	3
TOTAL	39	100%

Independent Variables

The distribution of many dichotomous independent variables turned out to be too skewed or overrepresented to be used in meaningful analysis for relations

between the physical environment and burglary. For instance, nearly all the apartment complexes had deadbolts on and peepholes in every door. All apartment complexes had windows that were easily accessible from the first floor, and windows were usually accessible from other floors. Pedestrian access was rarely limited to less than three entry/exit points.

Most complexes did not have trees which provided access to apartments, and sliding glass doors and patios/balconies were rare. Most apartment complexes were not accessed from within the building, and street parking was adjacent infrequently to the apartment buildings. Few apartment complexes were enclosed with privacy fences.

Because the previously discussed variables all lacked a more heterogeneous distribution, they were not used for bivariate analysis except when comparing the extreme cases. Only variables which had values with 80% or less of the distribution were analyzed with the dependent variable. The following table displays the distribution of all accessibility and cover and concealability variables which were highly skewed.

TABLE 4:

DISTRIBUTIONS OF HIGHLY SKEWED INDEPENDENT VARIABLES			
	YES	SOME	NO
PATIOS/ BALCONIES PRESENT	13%		87%
SLIDING GLASS DOORS PRESENT	18%		82%
WINDOWS OF THE FIRST FLOOR EASILY ACCESSED	100%		
WINDOWS OF OTHER FLOORS EASILY ACCESSED	85%		15%
INTERIOR ENTRIES	13%	3%	84%
TREES PROVIDE ACCESS	18%		82%
DEADBOLTS PRESENT	89%	8%	3%
PEEPHOLES PRESENT	95%		5%
	2 OR LESS ENTRIES/EXITS		3 OR MORE
PEDESTRIAN ACCESS LIMIT	15%		85%
	PRIVACY FENCE		SEE-THRU/OTHER
FENCING TYPE	18%		82%

The following tables and figures represent the distributions of the remaining independent variables which measured accessibility and were more evenly distributed.

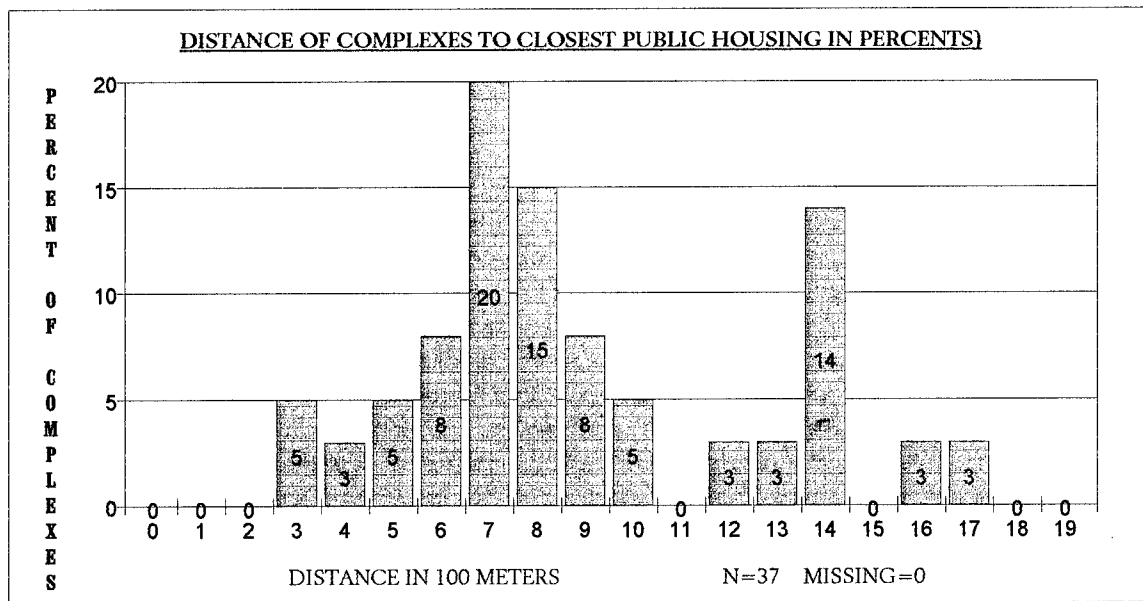
TABLE 5:

DISTRIBUTION OF DICHOTOMOUS ACCESSIBILITY VARIABLES		
	WOODEN	METAL
WOODEN DOORS	54%	46%
	YES	NO
MOTEL TYPE EXTERIOR ENTRIES	74%	26%
24 HOUR MANAGER/ SECURITY	71%	29%
	2 OR LESS ENTRIES/EXITS	3 OR MORE
NONRESIDENT AUTO ACCESS	76%	24%
	CORNER	OTHER
LOCATION OF COMPLEX	46%	54%
	EASY/NO FENCE	DIFFICULT
FENCING CLIMBABILITY	77%	23%

TABLE 6:

PARKING LOT ADJACENT TO BUILDING ON HOW MANY SIDES		
SIDES	FREQUENCY	PERCENTAGE
1	9	23%
2	10	25
3	12	31
4	8	21
TOTAL	39	100%

For better clarity, the distribution of the distances of complexes to the closest public housing was represented with a bar chart. Figure 2 shows this distribution.



Mean Distance=0.85 Kilometers (Public housing excluded from sample)

FIGURE 2.

The variable measuring distance to public housing (rounded to the nearest 100 meters) was dichotomized for analysis into apartment complexes which were 700 meters or closer or 800 meters or farther from public housing.

TABLE 7:

DISTANCE TO CLOSEST PUBLIC HOUSING		
	FREQUENCY	PERCENT
700 METERS OR LESS	16	43%
800 METERS OR MORE	21	57
TOTAL	37	100%

The following tables of univariate distributions illustrate the independent variables which measured cover and concealability and had values that equaled 80% or less of the sample (were more evenly distributed).

TABLE 8:

VEGETATION PROVIDES CONCEALMENT		
	FREQUENCY	PERCENTAGE
YES	12	31%
NO	27	69
TOTAL	39	100%

TABLE 9:

CAN DOORS BE VIEWED FROM STREET OR PARKING		
	FREQUENCY	PERCENTAGE
YES	13	33%
SOME	17	44
NO	9	23
TOTAL	39	100%

TABLE 10:

PEDESTRIAN TRAFFIC		
	FREQUENCY	PERCENTAGE
LIGHT	28	72%
MEDIUM/HEAVY	11	28
TOTAL	39	100%

TABLE 11:

STREET TYPE		
	FREQUENCY	PERCENTAGE
MAIN	8	20%
SIDE	31	80
TOTAL	39	100%

TABLE 12:

SURROUNDING NEIGHBORHOOD		
	FREQUENCY	PERCENTAGE
MOSTLY APARTMENTS	20	51%
MOSTLY HOUSES	8	21
MIXED COMMERCIAL	11	28
TOTAL	39	100%

TABLE 13:

SURROUNDING LAND		
	FREQUENCY	PERCENTAGE
ADJACENT TO WOODED / VACANT LOT	20	52%
ALL BUILDINGS	19	48
TOTAL	39	100%

The following tables demonstrate the univariate distributions of the control variables used during bivariate analysis.

TABLE 14:

DISTRIBUTION OF THE AVERAGE TIMES OF BURGLARIES		
	FREQUENCY	PERCENTAGE
6:00 AM TO 6:00 PM	15	52%
6:00 PM TO 6:00 AM	14	48
TOTAL	29	100%

TABLE 15:

PERCENTAGE OF STUDENT RESIDENTS		
	FREQUENCY	PERCENTAGE
0-75%	8	21%
76-100%	31	79
TOTAL	39	100%

TABLE 16:

DISTRIBUTION OF SIZE OF COMPLEXES							
NUMBER OF UNITS	25-50	51-100	01-150	151-200	201-250	251-300	OVER 301
NUMBER OF COMPLEXES	11	14	6	6	0	1	1

TABLE 17:

COST OF SMALLEST RENTAL SIZE		
	FREQUENCY	PERCENTAGE
LESS THAN \$200	3	8%
\$201-250	1	3
\$251-300	6	15
\$301-350	10	26
\$351-400	12	30
OVER \$400	7	18
TOTAL	39	100%

Bivariate Analysis

Full Sample

Accessibility. Variables measuring ease of access analyzed were door types, exterior motel type entries, security/24 hour manager, nonresident auto access, location of complex on the city block, fencing climbability, amount of available parking, and distance to closest public housing. The following table shows the correlations between the burglary rate and these variables in the full sample.

TABLE 18:

CORRELATIONS OF ACCESSIBILITY VARIABLES AND BURGLARY RATE		
	% VARIATION ACCOUNTED FOR (η^2)	STAT. SIG.
DOOR TYPES	2%	0.3
MOTEL TYPE ENTRIES	0.1%	0.8
24 HOUR MANAGER/SECURITY	3%	0.3
NONRESIDENT AUTO ACCESS	0.01%	1.0
LOCATION OF COMPLEX ON BLOCK	1%	0.5
FENCING CLIMBABILITY	0.003%	1.0
AMOUNT OF AVAILABLE PARKING	0.01%	0.9
DISTANCE TO PUBLIC HOUSING	10%	0.06

The types of doors on apartments showed a very small association with

burglary as did the presence of a manager or security, and location on the block. Motel type entries, nonresident auto access, fencing climbability, and amount of available parking presented practically no association with burglary rates of apartment complexes. The final measure of accessibility was the distance to public housing. Showing the highest correlation of the variables measuring the relationship between ease of access and burglary rates, the distance to public housing accounted for 10% of the variance of the burglary rate. An examination of Pearson's r confirmed the directional trend of higher burglary rates for apartment complexes which were closer to public housing areas. As the distance to public housing represented the proximity to low income, high density areas, this supported the hypothesis and findings from other research which showed higher burglaries in overcrowded areas.

Concealability. Cover and concealability characteristics analyzed against burglary in the full sample were concealability of vegetation, whether doors could be viewed from the street or the parking area, pedestrian traffic, street type, surrounding neighborhood, and surrounding land. Their correlations and statistical significance are summarized in the following table.

rates. This conformed to the predicted pattern. The relationship between burglary rates and whether doors could be viewed from the street or parking was re-examined after eliminating complexes with interior entries but it did not change. The direction of association for the volume of pedestrian traffic showed higher burglary rates for complexes with heavier pedestrian traffic around them. Overall, cover and concealability correlations, provided some support for the hypothesis.

Controls

Control variables used to further analyze correlations within the full sample were time of day, percentage of student residents in complex, size of complex, and cost of cheapest apartment within complex. Accessibility and concealability variables were re-analyzed and any changes in the relationships between burglary and the variables were discussed below.

Accessibility. When re-examining accessibility measures, a strong relationship emerged between fencing climbability and burglary rates for complexes with 75% or less student residents. Examining the direction of the association revealed, however, that for complexes with 75% or less student residents, higher burglary was associated with more difficult fences. Could this paradox be the result of reversed

causation? Perhaps fences which were difficult to climb were built around complexes because they suffered a higher burglary rate.

TABLE 20:

CORRELATION OF BURGLARY RATE BY FENCING CLIMBABILITY CONTROLLING FOR PERCENT STUDENT RESIDENTS		
	75% OR LESS	76% OR MORE
%VAF (η^2)	37%	0.5%

The correlation between burglary and the amount of nonresident auto entries/exits in the full sample was 0.01%. For burglaries which occurred between 6 p.m. and 6 a.m., more nonresident auto entries were associated with less burglaries (20% VAF), but for burglaries which occurred between 6 a.m. and 6 p.m. more auto entries were associated with higher burglaries (28% VAF). It seemed that the accessibility provided by more auto entries only mattered during the general daytime hours. Perhaps the times at which burglaries occurred were associated with a mode of transportation, and an automobile was used more frequently in burglaries which were committed between 6 a.m. and 6 p.m.

When controlling for the size of the complexes, this association increased to

7% in complexes which had 25 to 50 units, 8% in complexes with 51-100 units, and 44% in complexes with 151-200 units. For complexes with 151-200 units, the direction of association showed that more nonresident auto entries/exits were associated with higher burglary rates.

The relationship between burglary and location of the complex on the city block improved when controlling for apartment complex size. For complexes with 51-100 units the VAF was 27%. It was 14% for complexes with 101-150 units and 27% again for complexes with 151-200 units. This compared with just a 1% association in the original sample. The directional trend implied less burglaries for complexes on the corners. This did not support the literature.

The association between distance to public housing and the burglary rate grew stronger when controlling for the size of the apartment complexes. For complexes with 51-100 units the percent variation accounted for (VAF) was 39%. For complexes with 151-200 units, the % VAF was 27%. Both of these were stronger than the original correlation of 10%, and the direction of the association remained the same. Higher burglaries were associated with closer distances to the public housing area.

Concealability. The relationship between burglary and some measures of concealability changed when using control variables. When re-examining the burglary rate by the pedestrian traffic level, a stronger relationship developed when controlling for the size of the apartment complexes. The original association was 7% VAF but increased to 18% for complexes with 25-50 units, 19% for complexes with 51-100 units and 95% for complexes with 151-200 units. For complexes with 151-200 units, examining the direction of the association demonstrated that complexes with higher levels of pedestrian traffic carried by surrounding streets had higher burglary rates. This supported the proposition that high pedestrian traffic would afford concealability by providing the burglar the opportunity to blend in with her or his environment.

The relationship between burglary and street type grew stronger when controlling for size of apartment complex. Apartment complexes with 25-50 units showed a 13% VAF compared to a mere 0.3% for the original sample, and the direction was for higher burglary rates for complexes on main streets. This finding could be interpreted three ways. It *did not* support the proposition that side streets would provide better cover and concealment due to lower levels of surveillability. It

did support the proposition that main streets provided better cover and concealment by providing the burglar with more opportunity for blending into a high traffic, anonymous background. Thirdly, it was the result of a validity problem, and the variable of "street type" actually measured accessibility instead of concealability. In this way, it supported the proposition that main roads were more accessible, thereby providing a better opportunity for burglary.

The relationship between burglary and the surrounding neighborhood of an apartment complex changed when controlling for the lowest rental price of the apartment complex. The original relationship in the full sample showed an association of 11%. When examining complexes whose lowest rent for a unit was \$301-\$350, the association between burglary and the surrounding neighborhood rose to 58%. It was 56% for complexes with over \$400 for their lowest rental price. It would seem that the make-up of the surrounding neighborhood mattered only when examining the more expensive complexes.

Re-examining the effect of the surrounding land on the burglary rate while controlling for time uncovered an interesting relationship. Burglary rates and the surrounding land showed practically no relationship during the hours of 6 p.m. to 6

a.m. A relationship emerged, however, between 6 a.m. to 6 p.m. This relationship was also in the direction of higher burglaries for complexes surrounded by buildings. It would seem that the hours from 6 a.m. to 6 p.m. provided a better opportunity for burglary for apartment complexes surrounded by buildings. As these are the hours in which much activity occurs, this seemed to support the concept of concealability by providing the opportunity to blend into an active and anonymous environment.

TABLE 21:

CORRELATION OF BURGLARY RATE BY SURROUNDING LAND CONTROLLING FOR TIME		
	6 P.M. TO 6 A.M.	6 A.M. TO 6 P.M.
%VAF	0.3%	27%

When re-analyzing the relationship between the surrounding land and the burglary rates, the size of the complex seemed to increase the association. Complexes with 101-150 units showed a stronger correlation compared to the original (3%) of 15% VAF. Complexes with 151-200 showed an even stronger

correlation of 44%. Both of these associations, however, also showed that the association was for higher burglary rates for apartment complexes surrounded by all buildings rather than wooded or empty lots.

The findings on the relationship between the burglary rate and the surrounding land did not support the proposition that wooded or empty adjacent lots provided cover and concealment. Perhaps a complex surrounded by all buildings provided instead a more anonymous atmosphere in which a burglar could better blend. These findings also could be interpreted as supporting the concepts of routine activities theory because a complex surrounded completely by buildings would have more people passing by it to attend to work or pleasure routines.

Controlling for the percentage of student residents revealed a different association between burglary and the surrounding land for complexes with 75% or less student residents. The direction of association supported the original proposition, and higher burglary rates were associated with complexes which were adjacent to wooded or vacant lots (56% VAF).

TABLE 22:

CORRELATION OF BURGLARY RATE BY SURROUNDING LAND CONTROLLING FOR PERCENTAGE STUDENT RESIDENTS		
	75% OR LESS	76% OR MORE
%VAF	56%	4%

Although fencing type was not originally analyzed because of its skewed distribution, a strong relationship emerged under re-examination controlling for time. High burglaries were associated (61% VAF) with privacy fences when burglaries were committed between 6 p.m. and 6 a.m. It seemed that evening and early morning hours enhanced the importance of privacy fences to the commission of burglary. Perhaps using the concealability of a privacy fence only mattered if the initial climb over the fence was concealed by darkness.

TABLE 23:

CORRELATION OF BURGLARY RATE BY FENCING TYPE CONTROLLING FOR TIME		
	6 P.M. TO 6 A.M.	6 A.M. TO 6 P.M.
%VAF (η^2)	61%	3%

Summary. The relationship between burglary rates and accessibility measures of nonresident auto access and distance to public housing grew stronger when controlling for complex size and time, thereby showing greater support for the hypothesis. Concealability measures of pedestrian traffic and street type showed a stronger relationship when controlling for complex size and also supported the hypothesis. Other measures showed mixed or unexpected results when controlling for time, percentage of student residents, size, or rental price.

Deviant Cases

Because the sample was small and the dependent variable, an interval measure, many crosstabulations yielded cells which were empty or very small. In addition, variables were not used in bivariate comparisons if they were skewed due to the homogeneity of the sample (had a single value with 80% or more of the distribution). This led to the comparison of apartment complexes with the highest and lowest burglary rates as an additional check for an association or trend. The highest were all complexes with a rate of 8% or more (which yielded six) and the lowest were all complexes with a rate of 0% (which also happened to yield six). All the variables were re-examined. Only comparisons in which there was a contrasting

relationship between the high burglary cases and the low burglary cases are discussed.

Accessibility. A slight relationship appeared upon examining the extreme groups with respect to the presence of sliding glass doors. The group with the highest burglary rates tended to have sliding glass doors. This supported the proposal that sliding glass doors would provide easier access and, therefore, higher burglary rates.

TABLE 24:

PRESENCE OF SLIDING GLASS DOORS: COMPLEXES WITH SIX HIGHEST/SIX LOWEST BURGLARY RATES (PERCENTS)		
	HIGHEST	LOWEST
YES	33%	17%
NO	66	83
TOTAL	100%	100%

A metal door was associated with higher burglary rates. This was not expected because a metal door was assumed to provide more difficult access than a wooden door. Perhaps the causal relationship was reversed and higher burglaries led to the installation of metal doors, or perhaps wooden doors were more commonplace in

complexes with interior entries, and complexes with interior entries were generally locked and more difficult to access.

TABLE 25:

DOOR TYPE: COMPLEXES WITH SIX HIGHEST/SIX LOWEST BURGLARY RATES (PERCENTS)		
	HIGHEST	LOWEST
WOODEN	33%	67%
METAL	67	33
TOTAL	100%	100%

The accessibility of windows which were on the second floor or higher appeared to associate with the burglary rate when comparing the extreme groups. The group with the highest burglary rates had windows which were easily accessible. This supported the hypothesis.

TABLE 26:

WINDOWS 2ND FLOOR AND UP EASILY ACCESSED: COMPLEXES WITH SIX HIGHEST/SIX LOWEST BURGLARY RATES (PERCENTS)		
	HIGHEST	LOWEST
YES	100%	67%
NO	0	33
TOTAL	100%	100%

Examining the relationship between the burglary rate and complexes with apartments accessed from within the building revealed that complexes with the lowest rate were more likely to have interior entries than complexes with the highest rate of burglaries. This supported the proposal that exterior entries, being easier to access, would have more burglaries.

TABLE 27:

ARE APARTMENTS ACCESSED FROM INSIDE THE BUILDING: COMPLEXES WITH SIX HIGHEST/SIX LOWEST BURGLARY RATES (PERCENTS)		
	HIGHEST	LOWEST
YES	00%	17%
NO	100	83
TOTAL	100%	100%

Although the association was small, complexes with no burglaries were more likely to have security or 24 hour managers. This supported the prediction that the presence of a manager or security would limit the access to the complex and the opportunity for burglary.

TABLE 28:

SECURITY OR 24 HOUR MANAGER: COMPLEXES WITH SIX HIGHEST/SIX LOWEST BURGLARY RATES (PERCENTS)		
	HIGHEST	LOWEST
YES	50%	67%
NO	50	33
TOTAL	100%	100%

A comparison of the deviant cases showed that complexes with the highest rate had three or more entries for pedestrians. This find supported the hypothesis and the proposition that greater pedestrian accessibility would lead to greater opportunity for burglary.

TABLE 29:

PEDESTRIAN ACCESS LIMIT: COMPLEXES WITH SIX HIGHEST/SIX LOWEST BURGLARY RATES (PERCENTS)		
	HIGHEST	LOWEST
2 OR LESS ENTRIES/ EXITS	00%	17%
3 OR MORE	100	83
TOTAL	100%	100%

As with the full sample, the deviant cases supported an association between low burglary and corner locations. Literature supported the relationship of a higher burglary rates among houses that were located on the corner but for apartment complexes in this study, the reverse was true. Perhaps the higher volume of traffic that would presumably occur on a corner created an environment in which the burglar's actions were not easily concealed, thereby measuring a lack of concealability instead of easy access.

TABLE 30:

LOCATION ON BLOCK: COMPLEXES WITH SIX HIGHEST/SIX LOWEST BURGLARY RATES (PERCENTS)		
	HIGHEST	LOWEST
CORNER	33%	50%
OTHER	67	50
TOTAL	100%	100%

Analysis of the deviant cases supported the findings of the full sample and the and controls for time, student resident percentage, size of complex and rental prices. All showed a correlation between distance to public housing and burglary. The

mean distance to public housing was 0.85 kilometers. The average distance among complexes with the six highest ratios was 0.6 kilometers. Among the group of lowest ratios, the average distance was 1.2 kilometers. There was strong support for the proposition that proximity to the highest density, low income area within zone 7 (represented by the distance to public housing) would lead to greater burglary rates due to the accessibility of the complex to a greater pool of burglars.

TABLE 31:

DISTANCE TO PUBLIC HOUSING: COMPLEXES WITH SIX HIGHEST/SIX LOWEST BURGLARY RATES (PERCENTS)		
	HIGHEST	LOWEST
700 METERS OR LESS	83%	17%
800 METERS OR MORE	17	83%
TOTAL	100%	100%

Concealability. Analysis of the deviant cases showed the same trend as the full sample regarding concealing vegetation. Complexes with the highest burglary rate were more likely to have concealing vegetation.

TABLE 32:

DOES VEGETATION PROVIDE CONCEALMENT: COMPLEXES WITH SIX HIGHEST/SIX LOWEST BURGLARY RATES (PERCENTS)		
	HIGHEST	LOWEST
YES	50%	33%
NO	50	67
TOTAL	100%	100%

Examination of the extreme groups showed the opposite association from the full sample for viewing doors from the street. Complexes with the lowest burglary rate were more likely to have doors that were not visible from the street or parking, but this group included several complexes with interior access apartments. This might have caused the relationship in the deviant case analysis to be due to the intervening variable of complexes with apartments accessed from the interior of the building versus complexes with exterior entries.

TABLE 33:

CAN DOORS BE VIEWED FROM STREET OR PARKING: COMPLEXES WITH SIX HIGHEST/SIX LOWEST BURGLARY RATES (PERCENTS)		
	HIGHEST	LOWEST
YES	50%	17%
SOME	33	50
NO	17	33
TOTAL	100%	100%

In the deviant groups, complexes with the lowest rates were more likely to have light pedestrian traffic. These findings supported the hypothesis and were reflected in the literature. Heavier pedestrian traffic provided the burglar with anonymity and supported the hypothesis that a greater opportunity for cover and concealment would be associated with a higher burglary rate.

TABLE 34:

PEDESTRIAN TRAFFIC: COMPLEXES WITH SIX HIGHEST/SIX LOWEST BURGLARY RATES (PERCENTS)		
	HIGHEST	LOWEST
LIGHT	50%	100%
MEDIUM/HEAVY	50	00
TOTAL	100%	100%

A slight correlation was found in the deviant case analysis when comparing the surrounding neighborhood and burglary rates paralleling the same unanticipated finding from the analysis of the full sample. Low burglary rates were associated with complexes surrounded mostly by apartments and high burglary rates were associated with complexes surrounded mostly by houses. High rates were not connected to mixed commercial areas as predicted by the literature.

TABLE 35:

SURROUNDING NEIGHBORHOOD: COMPLEXES WITH SIX HIGHEST/SIX LOWEST BURGLARY RATES (PERCENTS)		
	HIGHEST	LOWEST
MOSTLY APARTMENTS	33%	50%
MOSTLY HOUSES	34	17
MIXED COMMERCIAL	33	33
TOTAL	100%	100%

In comparing the deviant cases, complexes with lower burglary were more likely to have wooded or vacant lots adjacent to them and complexes with high rates were more likely to be surrounded by buildings. This unpredicted relationship (which was also discovered in the full sample) could have arose because areas

surrounded completely by buildings might have provided more opportunities to blend in with higher pedestrian densities or, in support of routine activities, burglary opportunities were more easily witnessed by those drawn to more built up areas for recreation or work.

TABLE 36:

SURROUNDING LAND: COMPLEXES WITH SIX HIGHEST/SIX LOWEST BURGLARY RATES (PERCENTS)		
	HIGHEST	LOWEST
ADJACENT WOODED/ VACANT LOT	17%	33%
ALL BUILDINGS	83	67
TOTAL	100%	100%

Although the average times at which burglaries occurred were used as a control variable, the researcher wanted to analyze its relationship with the extreme cases as a measure of concealability because the hours of 6:00 p.m. to 6:00 a.m. were generally during darkness. Examining the deviant cases indicated that the six highest complexes had all of their burglaries occur between 6:00 p.m. and 6:00 a.m. In zone 7, it seemed, night provided good cover and concealment.

For one final look at the relationship between apartment complex

characteristics and burglary rates, a table was composed showing all the characteristics measuring accessibility and concealability of the apartment complex with the highest burglary rate. Cumberland Forest's burglary rate was 16%, 4% higher than the next highest complex and double the cut-off point for the highest deviant cases. A review of its characteristics showed that Cumberland Forest possessed a majority of the characteristics that were predicted to be associated with higher burglary rates. Although it was originally a control variable, the time was included so that one could compare it to the deviant cases comparison conducted earlier. All the characteristics which corresponded with predicted higher burglary rates are marked with an asterix.

TABLE 37:

CHARACTERISTICS OF CUMBERLAND FOREST	
AVERAGE TIME OF BURGLARIES (control variable)	7:27 P.M.
PATIOS/ BALCONIES	YES*
SLIDING GLASS DOORS	YES*
TYPE OF DOORS	WOODEN*
DOORS VIEWED FROM STREET/ PARKING	YES
PEEPHOLES	YES
FIRST FLOOR WINDOWS EASILY ACCESSED	YES*

TABLE 37 (cont.):

SECOND FLOOR WINDOWS EASILY ACCESSED	YES*
WINDOW AIR CONDITIONER UNITS	NO
APARTMENTS ACCESSED WITHIN THE BUILDING	NO*
EXTERIOR MOTEL TYPE ENTRIES	NO
VEGETATION PROVIDED CONCEALMENT	NO
TREES PROVIDED ACCESS THRU CLIMBING	NO
FENCING	PRIVACY*
FENCING CLIMBABILITY	EASY*
PEDESTRIAN ACCESS LIMITS	NO LIMITS*
NONRESIDENT AUTO ACCESS LIMITS	1 ENTRY/ EXIT
PARKING LOT ADJACENT TO:	1 SIDE
STREET PARKING ADJACENT TO BUILDING	NO
PEDESTRIAN TRAFFIC	LIGHT*
DISTANCE TO PUBLIC HOUSING	0.4 KILOMETERS*
SURROUNDING NEIGHBORHOOD	MOSTLY HOUSES*
STREET	SIDE *
SURROUNDING LAND	WOODED LOT*
LOCATION ON BLOCK	OTHER (dead-end)
24 HOUR MANAGER/DOORKEEPER/SECURITY	NO*
DEADBOLTS ON APARTMENT DOORS	YES

* Characteristics which were predicted to be associated with high burglary rates

Bivariate analysis provided support for the two hypotheses of this research by showing a relationship between characteristics which provided ease of access and characteristic which provided cover and concealment with burglary rates in apartment complexes. Examining the deviant cases showed trends which were not apparent in the full sample and provided greater support for weak correlations shown in the full sample. These could prove more conclusive in future research with a more heterogeneous sample or with a micro-level analysis of the crime site.

CHAPTER 4

DISCUSSION

Summary

For apartment complexes in zone 7, ease of access indicated to be a factor in predicting higher burglaries. In measuring accessibility, distance from public housing to apartment complexes showed the strongest relationship with burglary rates in the full sample and in the deviant case analysis. This supported previously mentioned studies which pointed to higher burglary rates for houses or apartments located closest to low income, high density areas. Small relationships were found between higher burglary rates and the presence of sliding glass doors, easily accessible windows and number of pedestrian exits/entries into a complex. The presence of 24 hour managers or security also associated with higher burglary rates. The lack of very strong correlations was not discouraging as this was most probably due to a general level of accessibility among all apartment complexes in this zone.

After all, apartment complexes had a higher rate of burglary in zone 7 than house addresses. Stronger support for the hypothesis that easier access leads to higher burglary in apartment complexes might be found if a larger sample size with more diversity of architecture and characteristics is used.

Two of the characteristics used to measure ease of access presented unanticipated correlations with the burglary rate. Apartment complexes with motel-type exterior entries were predicted to have higher burglary rates due to the easier access these types of complexes provided to their apartments. They had common stairwells and landings compared to complexes with more isolated apartment entries. Secondly, if apartment complexes were located on the corner versus the middle of the block, then they were predicted to have higher burglary rates; this relationship, however, was reversed.

Were these reversed relationships caused by a validity problem with the measure of ease of accessibility? Perhaps they were all better measures of concealability instead. Motel-type complexes did provide a greater opportunity for surveillance since their entries were easier to observe. The sharing of stairwells and the proximity of apartment entries to each other could have provided a higher

volume of pedestrian traffic around the individual apartment doors, thereby discouraging covert burglary operations.

What could be the possible explanation for lower rates of burglary for complexes situated on corners? The same as above. Perhaps the difference between the literature on residential burglaries of houses and the finding rests in the explicit difference between the two types of structures. Houses on corners are more isolated, providing better cover and concealment from neighbors, yet they are easily accessed and easy to flee from because they offer more routes of escape. The apartment complex, on the other hand, is not isolated by its very nature. It is a massing together of multiple dwellings. The occupants are more numerous than in a house, and the likelihood is high that persons will be present at any given time.

Vegetation, pedestrian traffic, street type, and the observability of apartment entry doors from the street or parking area showed a predicted relationship, albeit somewhat small, upon analyzing the sample and the deviant cases. Surrounding land characteristics did not follow the predicted correlation. A possible explanation for the unexpected relationship between burglary and the surrounding land might be found in routine activities theory. Maybe complexes surrounded by buildings

provided more opportunities for potential burglars to be in contact with potential targets. The potential burglar would have greater reason to be in a developed area than in an undeveloped area with wooded or vacant lots.

A slight correlation was found in the sample when comparing the surrounding neighborhood and burglary rates. Analysis of the deviant cases showed low burglary rates in complexes surrounded by mostly other apartment complexes and high burglary rates in complexes surrounded by mostly houses. Did being surrounded by other complexes offer protection because of greater surveillability due to the higher volume of residents moving in and out of the densely populated area, or was there a validity problem in the measurement of this characteristic? Perhaps instead of predicting concealability due to a high level of anonymity and density found around areas with many apartment complexes, the more appropriate prediction would have been greater surveillability provided by the denser population. Furthermore, high burglary rates were not connected to mixed commercial areas as predicted by the published literature.

Although in the final analysis, ease of access and concealability did not conclusively prove to create the opportunity for residential burglaries in apartment

complexes of zone 7, they did indicate that a relationship existed. Cover and concealment based on the opportunity for anonymity seemed to have stronger support in the findings compared to cover and concealment based on the potential surveillability of a complex.

The correlations that were revealed in this research generally showed support for the tenets of opportunity theory and for routine activities. The results of this exploratory research will hopefully fuel future research to attempt the explanation of an aspect of objective and perpetual space, of urban form, of offenders and target opportunities and the roles they play in burglary (Brantingham and Jeffery, 1991).

Future Research

The biggest suggestion for future research concerns the ecological fallacy. The unit of analysis of this research was the apartment complex. Although this meso-level analysis was useful for this step of exploratory research, the next logical step would be to study residential apartment burglary at the micro-level. By studying the individual apartments as crime sites, the problems of the ecological fallacy could be avoided. In studying the complexes, characteristics such as

concealing vegetation were uniformly applied to the whole of the complex implying that all apartments had the same attributes. It was possible, however, that only several apartments within the complex suffered from concealing vegetation but were not the apartments that had been burglarized.

Another problem that could be rectified in future research pertains to the use of official data, specifically Tallahassee Police Department statistics. Crimes in Tallahassee were sometimes handled by the Sheriff's Office. It could not be inferred whether the amount of burglaries handled by the Sheriff's Office was at a consistent rate across all apartment complexes. The reported amount of burglaries would be complete if, in the future, data from the Sheriff's Office was collected as well as TPD data. Furthermore, triangulation by gathering data from victimization surveys would greatly enhance the reliability of the burglary rate.

The homogeneity of the sample was problematic to the analysis of all the gathered data. In order to analyze characteristics with greater heterogeneity, future research of residential apartment burglaries in zone 7 could be compared to a sample gathered from the whole of Tallahassee, or a study could be conducted on a random sample from all the complexes in Tallahassee.

This research was interested specifically in aspects of residential burglary, but the characteristics studied could have effected other forms of crime such as automobile burglary, theft, robbery or commercial burglary. A future consideration might be to include automobile burglary and or commercial burglary in the burglary rate or to measure robbery as part of the dependent variable.

If research is to be continued using apartments or apartment complexes with a large amount of student residents, the effects of the different school sessions should be taken into consideration. This research had a great amount of students residing in the complexes studied. The burglary rates might have fluctuated according to the vacancy and occupancy levels of the apartment complexes throughout the school year. In the future, measuring the effect of different times of the year on the burglary rate could produce better measurements and eliminate the ecological fallacy created by implying that annual rates are constant and reflect a true rate of burglarization.

In future research which does not study the individual crime in time and space, problems will arise when trying to decide which time accurately represents the average time of the burglaries under scrutiny. Averaging times can be fraught with

disaster as time is not on a linear scale but is circular.

In this analysis, the presence of a 24 hour manager or security were considered together as one characteristic. The manager, however, did not patrol the grounds of the complex. While some security guards did patrol the complex grounds, other complexes used resident deputies or police officers as security. Although complexes which used deputies or police officers were considered as having security, these law enforcement officials were not present at the complex every day. Future analysis should consider differentiating between resident managers, night security, 24 hour security, and security provided part-time by law enforcement officials.

Despite the fact that the measuring of physical characteristics would seem to be straightforward (especially when one records whether the characteristic is present or is not), validity problems can arise when defining what a particular characteristic is suppose to measure. This ambiguity was reflected in the literature, as past researchers tried to justify whether a particular finding was due to lack of social cohesion or to lack of surveillability.

Perhaps the greatest discovery of the current research was that some

characteristics chosen to measure one hypothesis, seemed, in the end, to be better measures of the other hypothesis. Take accessibility and concealment, for example. The apartments which had doors that were accessed from outside the building were both easier to access than doors enclosed within a building, yet they were also more visible to passers-by and residents in the vicinity of the apartment. Does the characteristic of exterior doors measure ease of access or does it measure a lack of concealability? It is difficult to suggest a solution to this problem as great researchers in the field of environmental criminology have yet themselves to solve this problem satisfactorily.

APPENDIX A

SURVEY INSTRUMENT

OBS stands for data reserved from observation. CITY DIR stands for data gathered from the city directory. TPD RPT means the data is gathered from Tallahassee Police statistics. RENTAL OFF refers to data gathered from asking personnel at the apartment's rental office. MAP means the data was obtained from a city topographical/planning map.

A *V* prefix indicates a demographic or control variable. An *A* prefix indicates a variable measuring ease of access. A *C* prefix indicates a variable measuring concealibility. A *D* prefix indicates the dependent variable.

V1. (OBS & CITY DIR) NAME OF APARTMENT COMPLEX

V2. (CITY DIR) NUMBER OF UNITS

V3. (TPD RPT) AVE. AMOUNT UNITS BURGLARIZED IN 1992/1993

V4. (TPD RPT) AVERAGE TIME OF BURGLARIES (in 24 hour time)

V5. (RENTAL OFF) APPROX. AMOUNT STUDENT RESIDENTS

1.0-25% 2.26%-50% 3. 51%-75% 4. 76%-100%

V6. (RENTAL OFF) COST FOR ONE BEDROOM UNIT,
UNFURNISHED, OR SMALLEST RENTAL SIZE:

1. LESS THAN \$200 2. \$200-\$250 3.\$251-\$300
4.\$301-\$350 5. \$351-\$400 6. OVER \$400

D7. NUMBER OF BURGLARIES TO NUMBER OF APARTMENT
UNITS.

A8. (OBS) PATIOS/ BALCONIES

1. YES 2. NO

A9. (OBS) SLIDING GLASS DOORS

1. YES 2. NO

A10. (OBS) TYPES OF DOORS

1. WOODEN 2. METAL 3. OTHER

A11. (OBS) FIRST FLOOR WINDOWS EASILY ACCESSIBLE

1. YES 2. NO

A12. (OBS) OTHER FLOOR WINDOWS EASILY ACCESSIBLE

1. YES 2. NO

A13. (OBS) WINDOW AIR CONDITIONER UNITS.

1. YES 2. NO

A14. (OBS) APARTMENT ENTRIES ACCESSED FROM WITHIN THE BUILDING:

1. YES 2. SOME 3. NO

A15. (OBS) MOTEL TYPE EXTERIOR ENTRIES

1. YES 2. NO

A16. (OBS) TREES PROVIDE ACCESS THROUGH CLIMBING

1. YES 2. NO

A17. (OBS) FENCING CLIMBABILITY:

1. EASY/NO FENCE 2. DIFFICULT

[Difficult would include chain link with outrigger over seven feet, or iron spikes or rails with no footholds over seven feet or privacy fence over ten feet]

A18. (OBS) ACCESS LIMITED TO HOW MANY ENTRY/EXIT POINTS BY FOOT:

1. 2 OR LESS 2. 3 OR MORE

A19. (OBS) ACCESS TO NONRESIDENTS LIMITED TO HOW MANY ENTRY/EXITS BY CAR:

1. 2 OR LESS 2. 3 OR MORE

A20. (OBS) PARKING LOT ADJACENT TO BUILDING ON:

0. NONE (STREET PARKING) 1. ONE SIDE 2. TWO SIDES
3. THREE SIDES 4. FOUR SIDES

A21. (MAP) DISTANCE TO CLOSEST PUBLIC HOUSING:
(*measured in 100 meters*)

A22. (OBS) LOCATION OF APARTMENT COMPLEX ON BLOCK:

1. CORNER 2. OTHER

A23. (RENTAL OFF) SECURITY GUARD/DOORMAN OR 24 HOUR
MANAGER ON DUTY:

1. YES 2. NO

A24. DO APARTMENT DOORS HAVE DEADBOLTS?

1. YES 2. SOME 3. NO

C25. (OBS) CAN DOORS BE VIEWED FROM STREET OR PARKING

1. YES 2. SOME 3. NO

C26. (OBS) PEEPHOLES

1. YES 2. SOME 3. NO

C27. (OBS) VEGETATION PROVIDES ADEQUATE CONCEALMENT

1. YES 2. NO

C28. (OBS) FENCING:

- 1. PRIVACY 2. SEE-THROUGH/OTHER

C29. (OBS) RATE GENERAL AMOUNT OF PEDESTRIAN TRAFFIC
CARRIED BY STREET:

- 1. LIGHT 2. MEDIUM 3. HEAVY

C30. (OBS) SURROUNDING NEIGHBORHOOD:

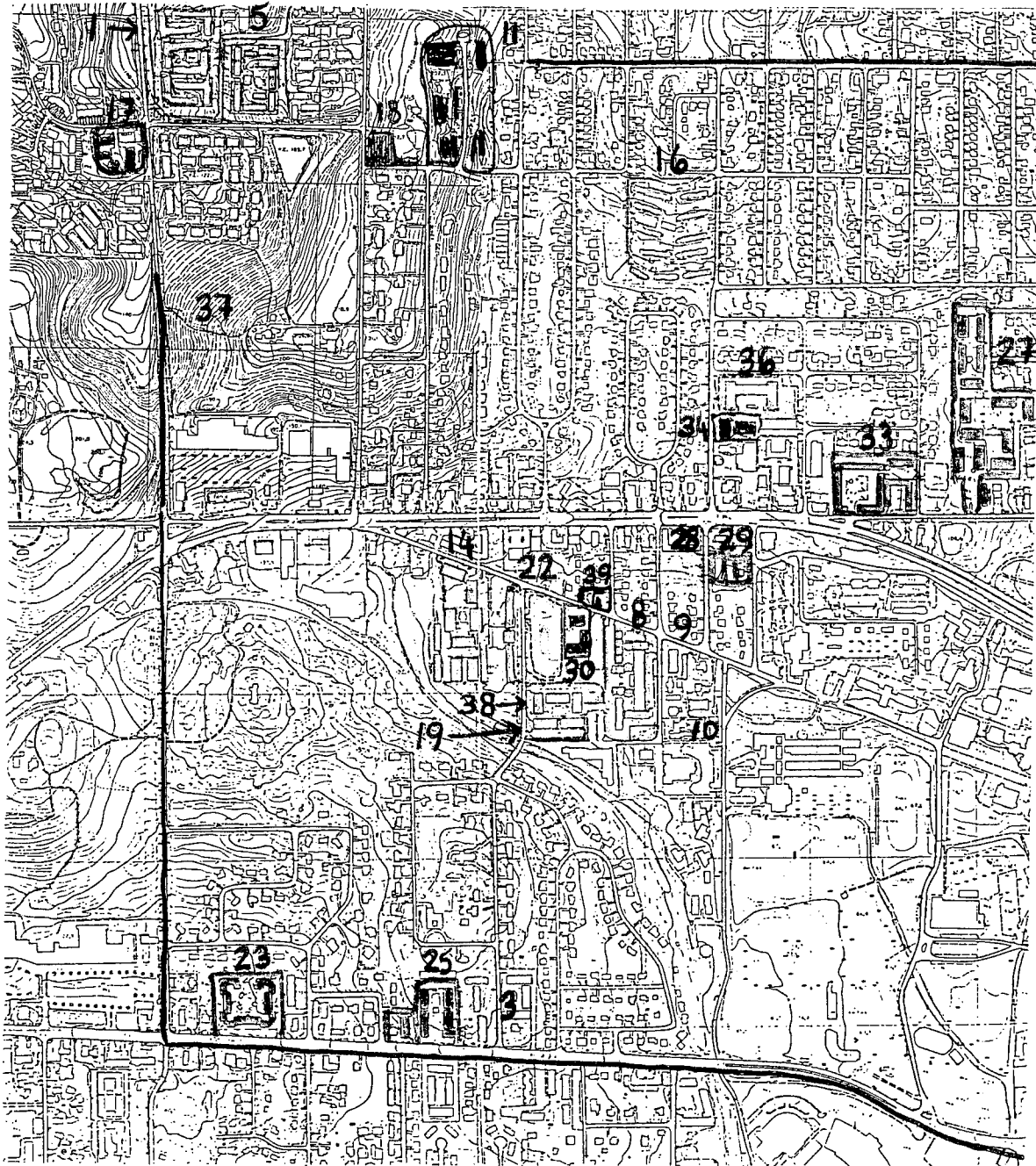
- 1. MOSTLY APTS 2. MOSTLY HOUSES 3. MIXED
COMMERCIAL

C31. (OBS) STREET: 1. MAIN 2. SIDE

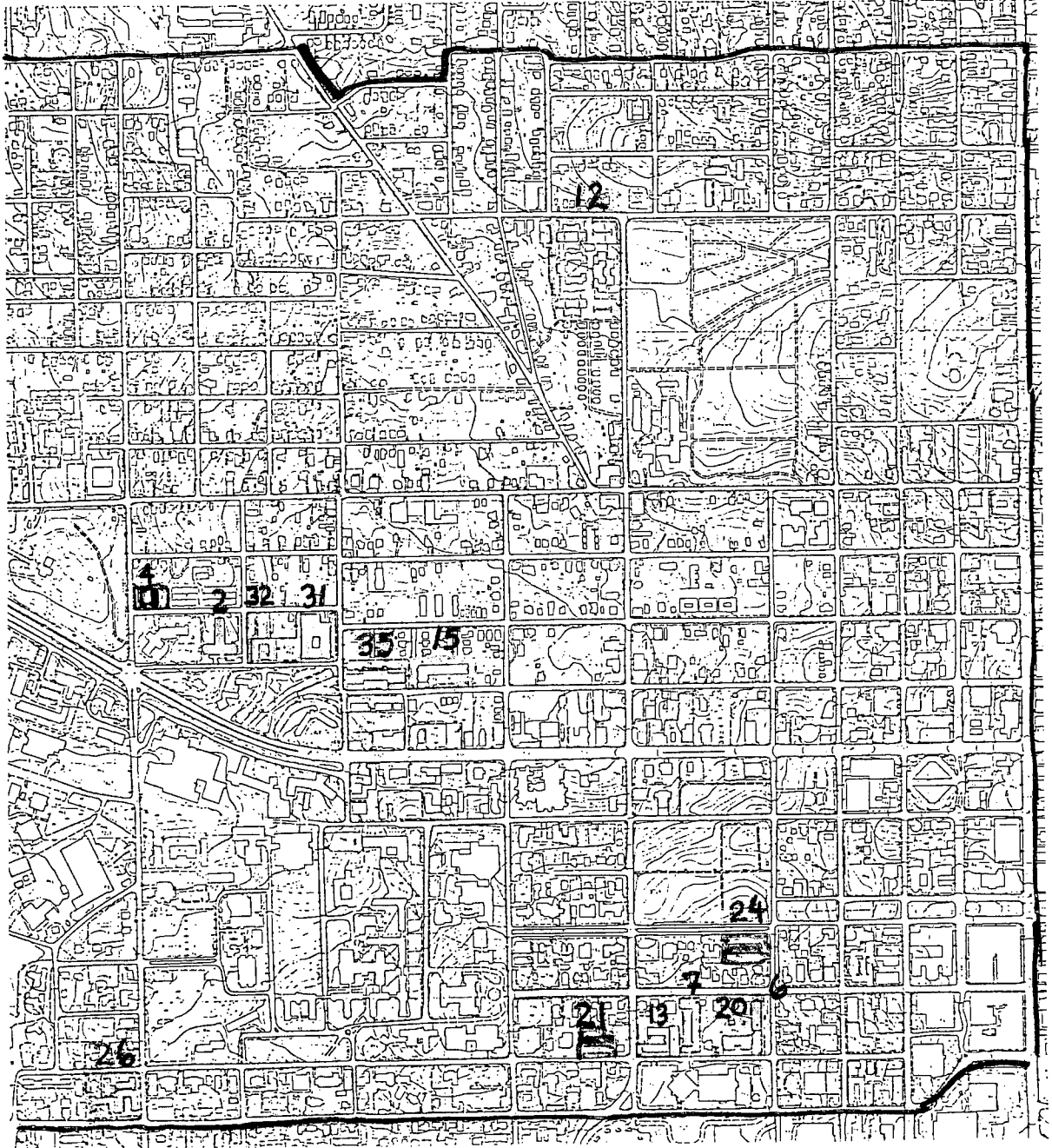
C32. (OBS) SURROUNDING LAND:

- 1. ADJACENT VACANT /WOODED AREA
- 2. ALL BUILDINGS

APPENDIX B: MAP OF BURGLARY RATES



PURPLE=0,1%
 BLUE=2,3%
 GREEN=4,5%
 YELLOW=6,7%
 PINK=8,10%
 RED=12,16%



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